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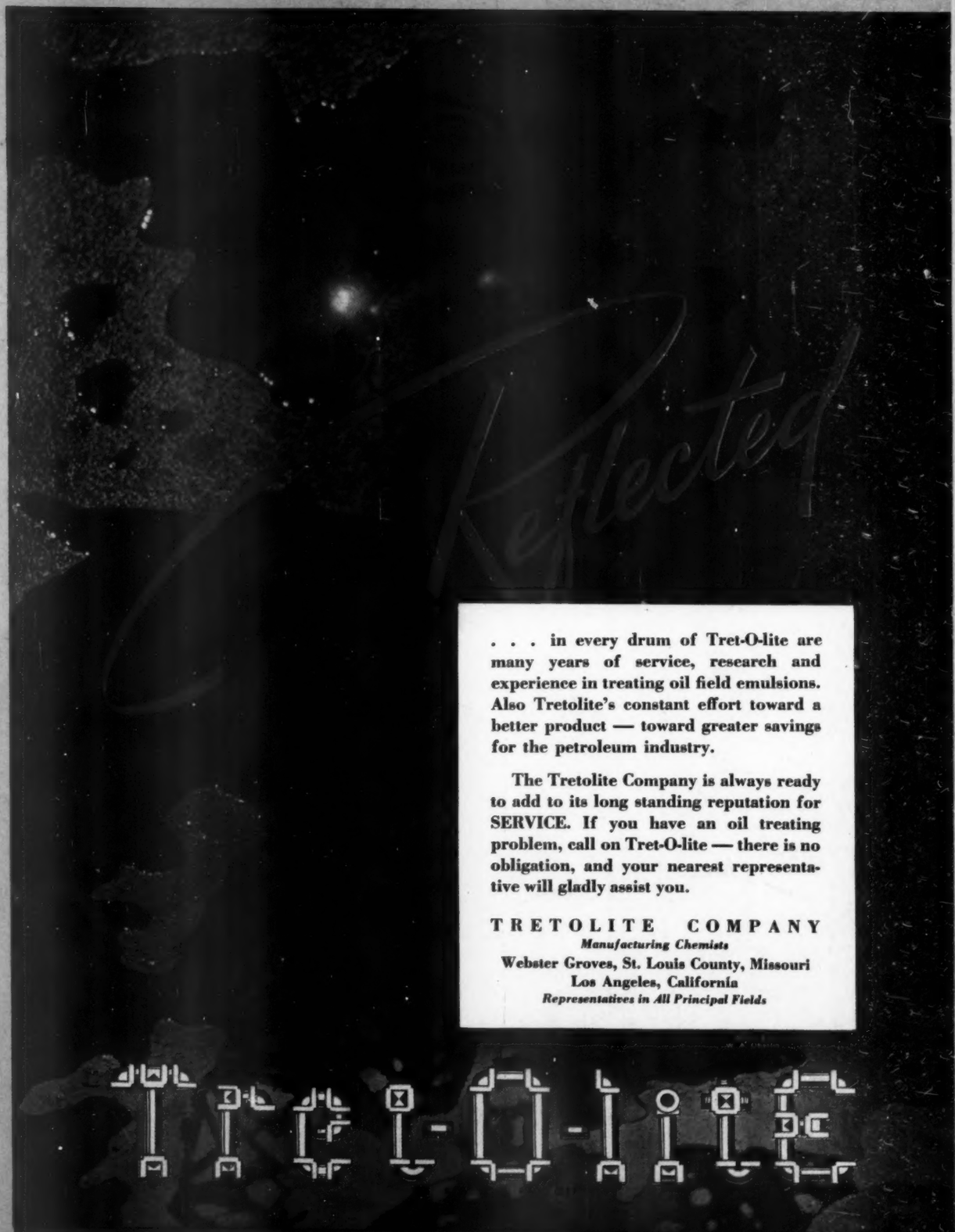

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The Oil and Gas Journal

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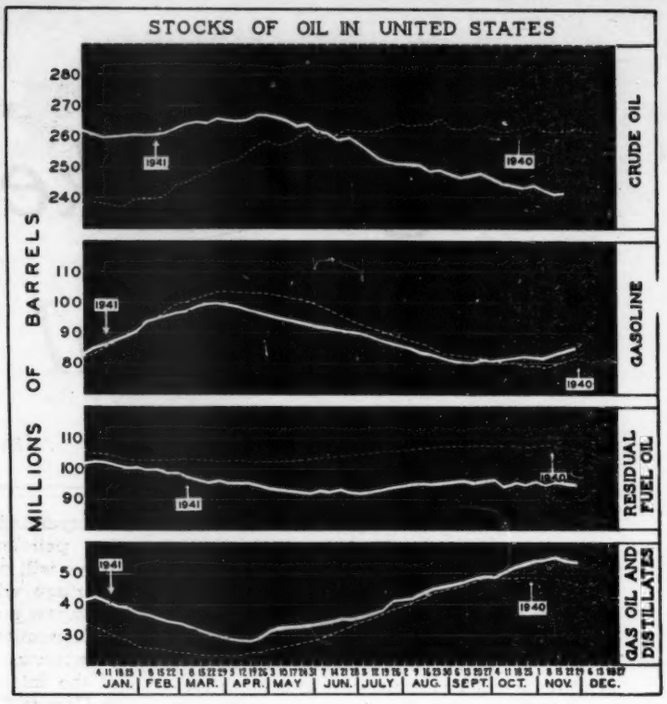
HYDRAULIC PUMPING SYSTEM

Trends

Price Advance Delays Bring Postponements in 1942 Operating Plans



DELAYS in obtaining action at Washington in regard to requested price advances are disappointing to operators. Many are holding up final decisions relative to 1942 operating programs. The feeling is general that higher crude prices are necessary before many operators will be justified in approving operating plans for next year which call for enlarged exploratory work and additional drilling in proven areas from which will come a large part of the increased production required for next year. A similar situation applies to secondary-recovery operations. In many instances companies are prepared to inaugurate this type operation in new areas or expand existing operations provided posted crude-oil schedules are advanced to cover costs which are higher than the schedules now in effect at wells.

CRUDE PRODUCTION *4,085,570 bbl. daily average—down 243,795 bbl. One year ago 3,325,725 bbl.*

CRUDE STOCKS *241,956,000 bbl. as of November 22 — up 1,557,000 bbl. One year ago 261,680,000 bbl.*

GASOLINE STOCKS **85,525,000 bbl. as of November 29—up 946,000 bbl. One year ago 79,495,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *95,971,000 bbl. as of November 29—down 11,000 bbl. One year ago 104,806,000 bbl.*

GAS OIL AND DISTILLATES *54,141,000 bbl. as of November 29—down 255,000 bbl. One year ago 46,785,000 bbl.*

REFINERY RUNS *4,115,000 bbl. daily week ended November 29 — up 120,000 bbl. One year ago 3,510,000 bbl.*

*Includes 7,457,000 bbl. aviation motor fuel, down 59,000 bbl. One year ago 6,311,000 bbl.

The Office of Price Administration the past week indicated its willingness to advance prices for crude oil and products where justified, and outlined the procedure necessary to bring the request to the attention of that agency. Actually OPA for several weeks has had requests for upward adjustments in crude prices affecting Pennsylvania Grade and southwestern fields. There has been no indication as to when decisions will be made in these matters of immediate importance.

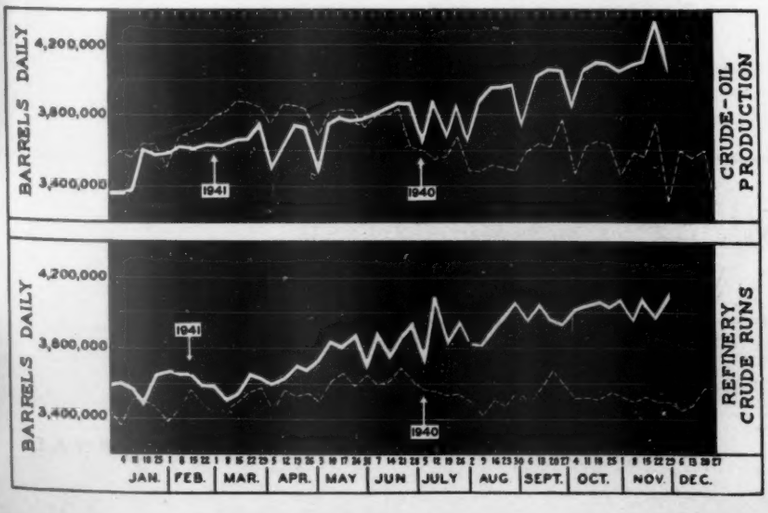
The position of operators was summarized in a "Report on Crude Petroleum Costs," released this week by the Independent Petroleum Association of America. This report which was called to the attention of Petroleum-Coordinator Ickes and Price-Administrator Henderson on October 27 shows that the cost of finding, developing and producing crude oil has increased 35 cents per barrel since 1937 with present posted schedules 6 cents per barrel under 1937 levels. Operating costs for small wells in settled areas have increased 30 cents per barrel during the same period. The average investment per well has jumped from $28,000 in 1937 to $41,000 this year.

The report stresses the fact that most new fields are found by independent operators and their wildcat activities for the coming year will be dependent on the prices paid for crude oil. The association also points to the dangers inherent in a situation in which stripper wells are being junked due to low prices in order to salvage equipment for use in flush fields. Other factors include a 100 per cent increase in materials costs since 1937 with second-hand supplies in some instances now selling for more than the new materials which are not readily available. The significance of higher labor costs and taxes are also discussed. Comparable data covering operations in Pennsylvania Grade fields have been presented to OPA.

DAILY AVERAGE PRODUCTION FOR WEEK

	Nov. 29, 1941	Bur. Mines Nov. est. of demand	November state allowables	Nov. 22, 1941
Arkansas	74,070	76,500	73,653	73,360
California	641,500	626,700	613,200	653,250
Eastern fields	113,250	114,800	.....	113,750
Illinois	398,600	408,100	.....	396,550
Kansas	249,200	253,500	257,000	254,250
Louisiana	348,425	333,200	347,058	348,005
North Louisiana	*81,575*	.....	.....	*81,955*
Louisiana Gulf Coast	*266,850*	.....	.....	*266,050*
Michigan	56,960	47,400	57,550	57,620
Mississippi	71,395	55,100	.....	78,930
Nebraska	6,550	6,200	.....	6,500
New Mexico	117,670	115,200	116,500	116,300
Oklahoma	425,250	469,400	428,000	427,100
Rocky Mountain states	110,050	109,200	.....	109,300
Texas	1,472,650	1,454,700	1,533,282	1,694,450
East Texas	*369,500*	.....	.....	*438,250*
West Texas	*286,500*	.....	.....	*332,700*
North Central Texas	*138,000*	.....	.....	*148,950*
East Central Texas	*86,100*	.....	.....	*90,450*
Texas Panhandle	*85,100*	.....	.....	*95,000*
Texas Gulf Coast	*412,950*	.....	.....	*482,350*
Southwest Texas	*94,500*	.....	.....	*106,750*
Total United States	4,085,570	4,070,000	.....	4,329,365

Total production, Jan. 1-Nov. 29, 1941 .... 1,265,859,295 bbl.
Same period last year ..... 1,229,300,385 bbl.



Barges Take Strong Position In Coast-Oil Transportation

By NEIL WILLIAMS

Expanded use of barges for transporting petroleum through inland waterways will continue although the tanker shortage which gave this medium its strongest push has been alleviated.

Economies in the use of barges is pronounced on short hauls. Extension of the intercoastal-canal system south to Corpus Christi, Tex., will give refiners in that section a new outlet to Mississippi and Ohio River points. Total oil moved by barges on the Gulf Coast during the first 9 months of this year was nearly 6 million barrels greater than for all of 1940.

HOUSTON, Tex., Dec. 1.—Regardless of the extent to which tankers are returned to Gulf Coast service, use of barges is expected to occupy an increasingly important place in the transportation of petroleum and its products in this district. While the availability of tankers and lowering of tanker rates will provide economic limitations to the distances and volume of barge movement outside this district, the latter form of transportation is in a position to compete closely with tankers at all times on short hauls, such as between various Gulf Coast points. That barges eventually will replace tankers almost entirely for intracoastal movement is considered probable.

Extension of the intracoastal canal as far south as Corpus Christi, Tex., is nearing completion. The canal will be opened for boats and barges of less than 6-ft. draft shortly after the first of the year. This will provide only limited use by some of the smallest barges, but by next spring it is expected that the canal will be dredged all the way to at least a 9-ft. depth, which is adequate for all barges. The canal already extends eastward to the Mississippi River, accommodating an increasing volume of oil movement.

The canal extension will open the way for refiners and shippers of the Corpus Christi area to move their oil and refined products direct by barge to other coastal points, as well as to Mississippi River and Ohio River destinations, the same as refiners and shippers of the Houston-Texas City, Beaumont-Port Arthur districts and South Louisiana have been able to do for some time. Until now all movement from the Corpus Christi district to other Gulf Coast points necessarily has been by tankers. In times of acute tanker scarcity Corpus Christi district shippers, without other means of transportation, have been at a particular disadvantage. A substantial volume of oil produced in the Corpus Christi area normally finds outlet at other Gulf Coast refining centers and when the canal is completed it will be possible to move much of this crude by barge. This might put Corpus Christi district oil in closer competition with that of other Gulf Coast areas, both in intracoastal markets, and for movement up the Mississippi River. To compete in the Mississippi River trade, Corpus Christi shippers now have to move their oil by tanker to some terminal already on the intracoastal canal, preferably on the Mississippi River, and then reload to river barges, entailing an additional handling cost.

Let Large Contracts

In anticipation of moving their oil by way of the canal, two of the largest shippers at Corpus Christi already have made provision for barge fleets. Southern Minerals Corp., through Southern Pipe Line Corp., has let contract for nine steel barges, each of 9,000-bbl. capacity, and Taylor Refining Co. will get the same number of 10,000-bbl. barges. The 9,000-bbl. barges require approximately 230 tons of steel and cost around $32,500 each. The larger barges take 250 tons of steel, making the cost per barrel around $3. Priority ratings of A-2 were obtained on these barges.

Southern Minerals Corp. has contracted with Butcher-Arthur Corp., barging contractors, to operate the barges and furnish the tow boats. In the arrangement Butcher-Arthur will lease the barges from Southern Minerals for general use, but will provide Southern Minerals with equivalent barge capacity whenever needed. The latter

Left: Loading oil barges at Gulf Coast terminal. It is considered probable that barges will eventually replace tankers almost entirely for intracoastal movement. Below: An oil-barge tow through Intracoastal Canal in coastal Louisiana

company anticipates the movement of a large part of its material by barge.

Maritime Oil Co., of Houston, Tex., which obtains part of its requirements out of the Corpus Christi area, also is providing a barge fleet, as is Southport Petroleum Co., of Texas City, through a subsidiary transport company. Various other companies, in addition to those already having barges, are considering fleet acquisitions. Many of the larger companies which already own or have under control barge fleets also have taken steps or plan to increase carrying capacity in view of expected increased need for this form of transportation.

Because of the increasing barge movement of oil out of the Gulf Coast, barge construction generally is being expanded to meet the needs. Each month since the 50 tankers were withdrawn from Gulf Coast service has seen a gain in the number of oil barges under construction. On June 1, immediately after the tankers were removed, maritime reports showed 32 barges, totaling 16,020 bbl. gross tonnage, under construction. On November 1 there were 84 barges with a gross tonnage of 41,365 bbl. under construction.

Barge movement of oil in and out of the Gulf Coast of Louisiana and Texas during the first 9 months of this year totaled 51,731,373 bbl., according to figures of the Petroleum Conservation Division of the Department of the Interior. This was 5,965,913 bbl. greater than the barge shipments for the entire year of 1940. Barge shipments for the first 9 months of 1940 totaled only 32,729,371 bbl. (See Table 1.)

TABLE 1—TOTAL OIL BARGE MOVEMENT ON GULF COAST, 1941

(Data in barrels)

From:	To—Miss. River points	To—Atlantic Coast	To—Gulf Coast terminals	Total
Texas	2,819,447	4,884,633	10,426,112	18,130,192
Louisiana	9,418,299	1,471,244	22,711,638	33,601,181
Ttl. (9 mos.)	12,237,746	6,355,877	33,137,750	51,731,373
Ttl. 1940	9,466,683	5,168,271	31,130,506	45,765,460
Incr. 1941	2,771,063	1,187,606	2,007,244	5,965,913

TABLE 2—MISSISSIPPI RIVER BARGE SHIPMENTS BY MONTHS, 1941

Shipments From Texas Gulf Coast

(Data in barrels)

	Gasoline	Misc. refined products	Total
January	174,460	22,141	196,601
February	236,629	22,705	259,334
March	222,395	33,763	256,158
April	226,905	18,543	245,448
May	144,970	4,502	149,472
June	333,348	9,986	343,334
July	494,706	12,375	507,081
August	420,349	30,883	451,232
September	406,757	4,030	410,787
Total Texas, 9 mos.	2,660,519	158,928	2,819,447

Shipments From Louisiana Gulf Coast

	Gasoline	Misc. refined products	Total
January	671,173	196,849	868,022
February	608,344	174,845	783,189
March	767,959	201,436	969,395
April	803,851	162,221	966,072
May	943,442	191,907	1,135,349
June	960,463	270,992	1,231,455
July	736,684	300,461	1,037,145
August	1,016,614	210,798	1,227,412
September	1,028,982	171,278	1,200,260
Total La., 9 mos.	7,537,512	1,880,787	9,418,299
Total Gulf Coast, 9 mos., 1941	10,198,031	2,039,715	12,237,746
Total Gulf Coast, 1940	7,941,043	1,525,640	9,466,683

Shipments up the Mississippi and Ohio rivers accounted for a large part of the increased barge movement credited to the Gulf Coast. (See Table 2.)

Barge shipments up the Mississippi River have been increasing rapidly each month. These shipments during September 1941, the latest reported month, totaled 1,611,047 bbl., consisting of 1,435,739 bbl. of gasoline and 175,308 bbl. of kerosene and other refined products. (See Table 5.)

Much of the increase in barge shipments up the Mississippi and Ohio rivers this year has been occasioned by the transportation emergency created by the lack of tankers to move oil from the Gulf Coast to its eastern markets. It is probable that when sufficient tankers again are available a substantial part of the movement that has been diverted to barges will be returned to normal channels of transportation. This will be particularly true of the oil that is destined for points on the upper Ohio River for reshipment to the Atlantic seaboard states and areas formerly served from those states.

Tankers for Long Hauls

For such long hauls there is no question of the economy and other advantages of tanker transportation. The greater loads carried per trip, the higher speed, and the more rapid loading and unloading rates of tankers, make costs of moving oil by tanker materially less than by barges, when great distances are involved. On the other hand, with the greatly increasing number of barges now being put in service, efficiency of barges will be increased and rates lowered to a point their use will be continued for many markets formerly served by transportation routings participated in by tankers.

In Table 4 are shown the states along the Mississippi and Ohio rivers to which oil has been shipped by barges from the Gulf Coast this year.

Development of new types of barges or special inland-waterway boats that will speed transportation of oil up the Mississippi River and permit movement of greater loads per trip is being undertaken. Along this line, press dispatches reported the placing in service of a new tanker-type vessel on the Mississippi the past week. This boat is 235 ft. long with a 35-ft. beam and draws only 14 ft. of water. It is powered with two 350-hp. diesel engines and can travel 9 miles per hour, carrying 9,000 bbl. itself and pushing another barge, as well as providing deck space for other cargo. With such vessels or improved barges it may be possible to extend the practicability and

TABLE 3—LOCAL GULF COAST BARGE SHIPMENTS 1941, BY MONTHS

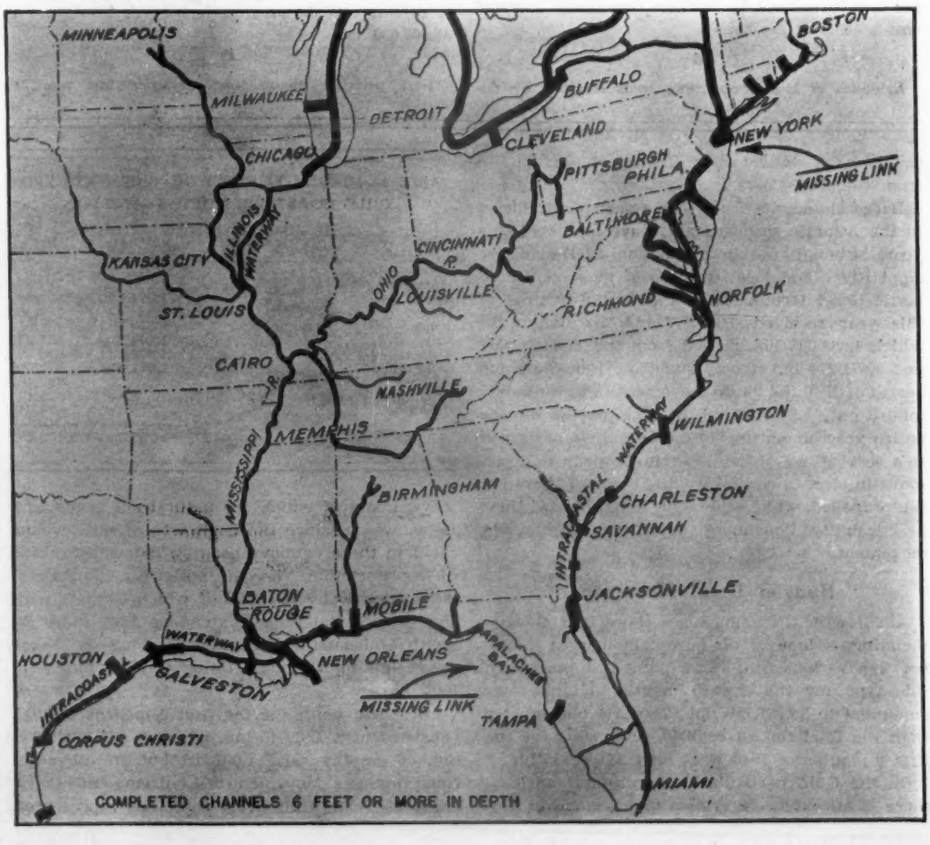
(Data in barrels)

Month:	Crude	Gasoline	Misc. refined products	Total
January	2,294,382	718,722	158,400	3,171,504
February	2,377,378	715,759	157,203	3,250,340
March	2,419,247	760,780	149,761	3,329,788
April	2,290,139	680,665	170,899	3,141,703
May	2,548,282	837,678	183,253	3,569,213
June	2,726,017	1,149,595	212,572	4,088,184
July	2,510,984	1,381,392	191,331	4,083,707
August	2,093,749	1,676,886	253,078	4,023,713
September	2,700,867	1,557,862	220,869	4,479,598
Total:				
9 mos., 1941	21,961,045	9,479,339	1,697,366	33,137,750
1940	24,386,259	5,461,773	1,283,474	31,131,506

TABLE 4—MISSISSIPPI RIVER OIL SHIPMENTS FROM GULF COAST, FIRST 9 MONTHS 1941

(Data in barrels)

Destination:	From Texas	From Louisiana	Total from Gulf Coast
Alabama	20,979	.....	20,979
Arkansas	.....	503,921	503,921
Illinois	439,906	734,698	1,174,604
Indiana	138,331	287,831	426,162
Iowa	.....	33,560	33,560
Kentucky	197,309	2,664,741	2,862,050
Minnesota	26,646	481,345	507,991
Mississippi	257,131	658,985	916,116
Missouri	36,012	483,543	519,555
New York	9,216	.....	9,216
Ohio	312,450	21,248	333,698
Pennsylvania	355,017	252,222	607,239
Tennessee	993,389	3,001,317	3,994,706
West Virginia	33,061	294,888	327,949
Total, 9 mos.	2,819,447	9,418,299	12,237,746
Total 1940	.....	.....	9,466,683



Map showing principal waterways of the United States. (Courtesy U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce)

This Week...

The Interstate Compact Commission, which is scheduled to meet at Oklahoma City, Okla., December 19-20, is to consider a successor to Gov. Leon C. Phillips, two-term chairman who wishes to be relieved. Mentioned for the post are J. C. Hunter, Abilene, Tex., and Andrew Schoeppel, of Kansas.

●

Office of Price Administration clarified its petroleum-price policies, saying advances would be permitted on proper and adequate showing that rising costs justified the upward movement. Most missed was a statement on applications now pending for permission to raise prices.

●

Studies launched to determine the cost of petroleum products, cost of transportation and other charges are aimed at determining basic changes in markets since start of the year.

●

Sixty-six representatives of the oil business appointed to the Petroleum Industry Council for National Defense summoned to Washington, D. C., for the first formal conference with Coordinator Ickes December 8. Out of the group will come an executive working committee of 12 to 15 members.

●

Lend-lease buying of petroleum products will be shifted entirely from the Gulf Coast to Caribbean supplying countries, reports from Texas indicate. American tankers may be used for the complete voyage to points of delivery in England and other anti-Axis countries because neutrality-law restrictions have been lifted.

●

Coastwise tanker rates on gasoline cargoes cut 20 per cent December 1 by Maritime Commission. Lowered cost is 40 cents per barrel.

●

Evidence of higher operating costs incurred by the industry in finding and producing oil was released this week by the I.P.A.A. in supporting its contention that crude prices should be permitted to advance. Outstanding is the representation that investment required for exploration alone has increased from $7,000 per well in 1937 to $20,000 per well in 1941, that the total investment per oil well this year is $41,000 as compared with slightly less than $28,000 in 1937 and that it now costs $1.50 per barrel of production to find, acquire, develop and produce crude.

●

The bulk of Soviet Russia's petroleum resources still are protected from German invading forces by the most formidable barrier in Europe—the Caucasian Mountains.

●

Legislation permitting the industry to deduct intangible drilling costs from income is receiving consideration in Washington, D. C. A bill will be submitted to Congress unless the Internal Revenue Bureau reverses its "confidential instructions" to field offices.

●

With Texas back on a normal schedule of production-shutdown days, crude output of the nation receded from its all-time peak and averaged 4,085,570 bbl., ending a 3-week cycle of advances.

●

Decision of the Army to tolerate 4 cc. of lead in 100-octane gasoline will increase available supply of motor fuel meeting this specification about 15 per cent.

●

General reduction of 3 octane numbers in the quality of civilian motor fuel appears imminent as the result of allocating greater quantities of tetraethyl lead to defense and the program to increase inventories to 16,000,000 lb.

●

High priority ratings were assigned this week to five more plants for the manufacture of 100-octane gasoline or some of its components. Total of such new plants under construction or to be started is 25.

THIS HUGE BRICK POWER-HOUSE STACK AT THE ECLIPSE WORKS OF ATLANTIC REFINING CO., AT FRANKLIN, PA., IS TOPPLED IN A DENSE CLOUD OF DUST AS 50 LB. OF DYNAMITE, IMBEDDED IN ITS BASE, IS SET OFF, BLASTING AWAY A SECTION OF THE FOUNDATION. THE 76-YEAR-OLD PLANT WAS ABANDONED 4 YEARS AGO AND ITS DEMOLITION IS NEARLY COMPLETED. THE TALL STACK WAS BELIEVED TO BE THE LARGEST BRICK STRUCTURE OF ITS KIND IN THE UNITED STATES. IT WAS BUILT IN 1916, WAS 310 FT. HIGH, 83 FT. IN CIRCUMFERENCE AT THE BASE, AND 15 FT. IN DIAMETER AT THE TOP. EXPERT DYNAMITERS USED 30 ADDITIONAL POUNDS OF DYNAMITE IN FOUR PRELIMINARY BLASTS TO WEAKEN THE FOUNDATION SO THE FINAL BLAST WOULD BRING THE BIG STACK DOWN.

economy of inland-water transportation of oil from the Gulf Coast.

Barge shipments from Gulf Coast points direct to the Atlantic seaboard also have increased this year, although not in proportion to the Mississippi River and local Gulf Coast movement. Atlantic Coast terminals for the first 9 months of this year received 6,355,877 bbl. by barges, of which 4,884,633 bbl. moved from the Texas Coast and 1,471,244 bbl. from Louisiana. For the same period of 1940 the barge movement to those points totaled only 3,230,856 bbl. with shipments for the entire year amounting to 5,168,271 bbl. Barges in this service are of semiseagoing type which can move in close-in coastal waters. Some of these are self-propelled, while others are taken in tow, their practicability depending upon the urgency of movement.

Heavier Local Movement

Along with these increases there is a steadily inclining volume of oil moved by barges locally between various Gulf Coast points. Shipments of this type for the first 9 months of this year amounted to 33,137,750 bbl., 2,006,244 bbl. greater than the total for all of 1940. Shipments for the first 9 months of 1940 were only 23,038,475 bbl.

On the Gulf, particularly in coastal Louisiana, there is an extensive system of navigable waterways, many of which are natural and some artificial, which, since the beginning of oil development in the area, have been an important means of transportation. The only outlet for many fields is by such waterways, all of which connect with the intracoastal canal extending the width of South Louisiana, and southward along the Texas Coast, linking various refining and shipping centers.

Local shipments for the first 9 months of 1941 consisted of 21,961,045 bbl. of crude oil, 9,479,339 bbl. of gasoline, and 1,697,366 bbl. of other refined products. Movement of Louisiana Gulf Coast crude to Texas Gulf Coast refineries represented the largest volume, totaling 21,160,231 bbl. Coastal Louisiana refined products barged into Texas amounted to 1,551,407 bbl.

Barge movements from Texas into coastal Louisiana totaled 10,426,112 bbl., of which 8,435,191 bbl. were gasoline, 1,190,107 bbl. were other refined products, and 800,814 bbl. crude.

TABLE 5—MISSISSIPPI RIVER OIL SHIPMENTS FROM GULF COAST BY MONTHS—1940-1941

(Data in barrels)

	1941	1940
January	1,064,523	363,372
February	1,042,523	636,935
March	1,225,553	787,278
April	1,211,520	837,359
May	1,284,821	759,360
June	1,574,789	734,955
July	1,544,226	851,235
August	1,678,644	616,990
September	1,611,047	872,556
October	.....	982,467
November	.....	925,430
December	.....	1,098,746
Total	12,237,746	9,466,683

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Plan to Assess Oil Properties On Reserves Is Shelved

LOS ANGELES, Calif., Dec. 2.—County Assessor Tom Burke of Kern County, which has the largest crude-oil reserve in California, has decided to shelve his attempt to force operators to furnish him with geological data which heretofore has been considered more or less confidential. Assessor Burke has been attempting for several months to obtain a county ordinance which would require producers to turn over all geological and engineering data. The assessor sought to assess properties on a basis of probable reserves. This plan would penalize operators who are retarding production as a conservation measure. Operators have decided to make available to the assessor as much data as he requires. Engineer Paul Howard will continue to make oil assessments for taxation.

Industry's Leaders Appointed to Serve on Petroleum Council

WASHINGTON, D. C., Dec. 1.—Closer cooperation between the oil industry and the Government is promised in the action of Harold L. Ickes, petroleum coordinator for national defense, in creating the Petroleum Industry Council for National Defense.

Composed of representative men from all branches of the industry, the council will meet frequently with the coordinator and his staff to discuss current problems as they arise. The first meeting has been called for Monday, December 8, in Washington, and it is planned to convene the council monthly hereafter.

Telegraphic invitations to serve on the council have been sent to 66 individuals. Of this number, 25 are ex officio members since they are also on the general committees of the five OPC districts; 11 additional members represent oil-trade associations; and the balance are individuals connected with various phases of the oil industry. Twenty-one major companies are represented either as general district committee members or additional appointments, but small companies and independent operators are also represented.

Functions of the council were not outlined by Coordinator Ickes beyond the statement that it is to consider problems of petroleum as they currently arise and advise the OPC on such problems. Apparently the council will have no particular powers or duties beyond providing an opportunity for an exchange of ideas. To a limited extent the setup of OPC is now similar to the organization under the NRA petroleum code, which had an industry authority and a government administrative board functioning separately but parallel, although at present neither the coordinator and his staff nor the council and the industry regional committees have any real administrative powers.

The need for closer contact was demonstrated at the meeting of marketing committeemen here last week which was attended by representatives of the Office of Production Management and the Office of Price Administration. The industry men minced no words in telling the OPM and OPA officials that they should work more closely with the industry on matters concerning prices, priorities, allocations, and related defense problems, and they virtually demanded that these other agencies seek and follow the advice of the coordinator's office before taking any official action.

While OPM and OPA, of course, are not required to accept any recommendations of the new council, it is expected that they will have representatives at the council's meetings and that closer coordination will result. Coordinator Ickes recently had occasion to remind OPA that under the terms of the president's letter setting up OPC all government agencies dealing with petroleum and defense should consult and advise with the coordinator before taking any affirmative action.

Following is part of the telegram announcing the establishment of the council and making ap-

(Continued on Page 27)

Members of Petroleum Industry Council for National Defense . . .

Col. T. H. Barton, president, Lion Oil & Refining Co., El Dorado, Ark.

C. S. Beesemyer, vice president, Gilmore Oil Co., Los Angeles, Calif.

Sidney Belither, executive vice president, Shell Oil Co., Inc., San Francisco, Calif.

M. L. Benedum, president, Benedum-Trees Oil Co., Pittsburgh, Pa.

Paul G. Blazer, president, Ashland Oil & Refining Co., Ashland, Ky.

W. R. Boyd, Jr., president, American Petroleum Institute, New York.

J. S. Bridwell, president, Bridwell Oil & Gas Co., Wichita Falls, Tex.

John A. Brown, president, Socony-Vacuum Oil Co., New York.

Frank Buttram, president, I.P.A.A., Oklahoma City, Okla.

H. Earl Clack, president, Clack Oil Co., Havre, Mont.

R. H. Colley, president, Atlantic Refining Co., Philadelphia, Pa.

H. D. Collier, president, Standard Oil Co. of California, San Francisco, Calif.

Howard Cowden, president, Consumers Cooperative Association, North Kansas City, Mo.

Henry M. Dawes, president, Pure Oil Co., Chicago.

R. E. Decker, president, National Oil Marketers Association, Detroit, Mich.

B. E. Devore, president, Independent Refiners Association of California, Los Angeles, Calif.

H. W. Dodge, vice president, Texas Co., New York.

O. D. Donnell, president, Ohio Oil Co., Findlay, Ohio.

J. Frank Drake, president, Gulf Oil Corp., Pittsburgh, Pa.

W. S. Farish, president, Standard Oil Co. (New Jersey), New York.

W. H. Ferguson, executive vice president, Continental Oil Co., Denver, Colo.

Jacob France, president, Mid-Continent Petroleum Corp., Tulsa.

J. L. Hamon, president, Cox & Hamon, Inc., Dallas, Tex.

Walter S. Hallanan, president, Plymouth Oil Co., Charleston, W. Va.

C. L. Henderson, president, Western Petroleum Refiners Association, Tulsa.

George A. Hill, Houston Oil Co., Houston, Tex.

Dana Hogan, president, Hogan Petroleum Co., Los Angeles, Calif.

W. T. Holliday, president, Standard Oil Co. of Ohio, Cleveland, Ohio.

Dan Hovey, president, Gulf Coast Refiners Association, Houston, Tex.

W. F. Humphrey, president, Tide Water Associated Oil Co., San Francisco, Calif.

J. C. Hunter, president, Mid-Continent Oil and Gas Association, Tulsa.

A. Jacobsen, president, Amerada Petroleum Corp., New York.

C. S. Jones, president, Richfield Oil Corp., Los Angeles, Calif.

Roy B. Jones, president, Panhandle Producing & Refining Co., Wichita Falls, Tex.

W. A. Jones, president, Cities Service Co., New York.

J. M. Lovejoy, president, Seaboard Oil Co. of Delaware, New York.

B. L. Majewski, vice president, Deep Rock Oil Co., Chicago.

A. C. Matiel, president, Honolulu Oil Corp., San Francisco, Calif.

C. P. McGaha, president, National Stripper Well Association, Wichita Falls, Tex.

D. J. Moran, president, Continental Oil Co., Houston, Tex.

S. B. Mosher, president, Signal Oil & Gas Co., Los Angeles, Calif.

Henry D. Moyle, vice president, Wasatch Oil & Refining Co., Salt Lake City, Utah.

Burton W. Musser, general counsel, Utah Oil & Refining Co., Salt Lake City, Utah.

John W. Newton, vice president, Magnolia Petroleum Co., Beaumont, Tex.

I. A. O'Shaughnessy, president, Globe Oil & Refining Co., Wichita, Kans.

J. R. Parten, chairman, Premier Oil Refining Co., Houston, Tex.

J. Howard Pew, president, Sun Oil Co., Pittsburgh, Pa.

Frank Phillips, chairman, Phillips Petroleum Co., Bartlesville, Okla.

E. E. Pyles, vice president, Hancock Oil Co., Long Beach, Calif.

E. B. Reeser, president, Barnsdall Oil Co., Tulsa.

Will J. Reid, president, Hancock Oil Co., Long Beach, Calif.

W. S. S. Rodgers, president, Texas Co., New York.

Charles F. Roeser, Roeser & Pendleton, Inc., Fort Worth, Tex.

E. G. Seubert, president, Standard Oil Co. (Indiana), Chicago.

R. S. Shannon, president, Minnelusa Oil Corp., Denver, Colo.

H. F. Sinclair, chairman, Consolidated Oil Corp., New York.

W. G. Skelly, president, Skelly Oil Co., Tulsa.

W. L. Stewart, vice president, Union Oil Co. of California, Los Angeles, Calif.

Reese H. Taylor, president, Union Oil Co. of California, Los Angeles, Calif.

Lawrence Vander Leck, president, Oil Producers' Agency, Los Angeles, Calif.

R. G. A. van der Woude, president, Shell Union Oil Corp., New York.

E. V. Weber, president, Ohio Petroleum Marketers Association, Cincinnati, Ohio.

N. H. Weber, president, National Petroleum Association, Washington, D. C.

A. L. Well, Los Angeles, Calif.

H. C. Wiess, president, Humble Oil & Refining Co., Houston, Tex.

Robert E. Wilson, president, Pan American Petroleum & Transport Co., New York.

Civilian Gasolines Likely To Be Cut in Octane Rating

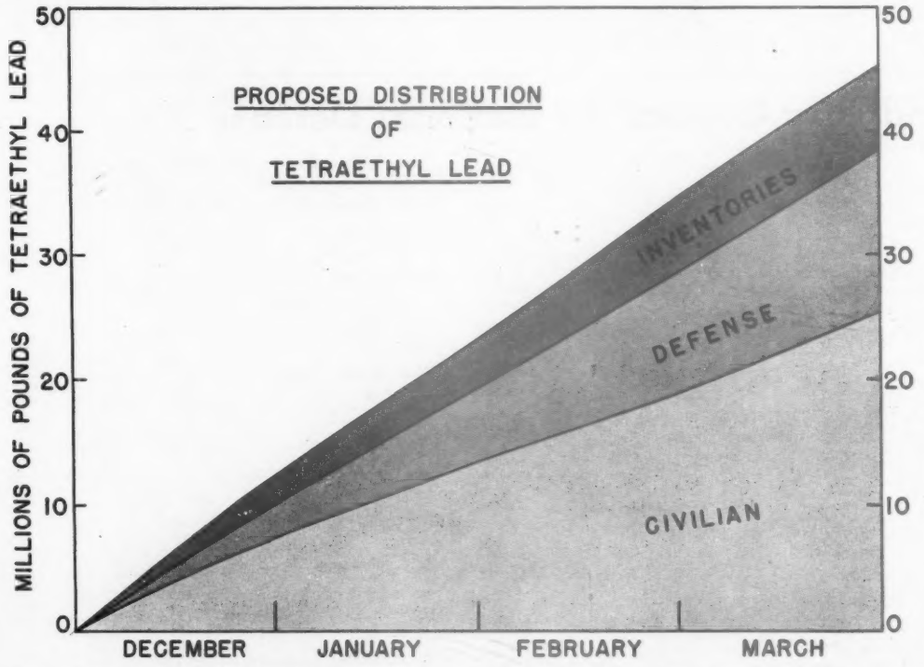
By W. T. ZIEGENHAIN

Temporarily the motor-fuel octane race is likely to go into reverse as a result of refiners being allocated about three-fourths as much tetraethyl lead for blending with civilian gasolines as normally used. What will happen after the emergency passes still is anybody's guess.

REFINERS of the nation, told to do with less lead for the first time since knock depressants became a standard ingredient in motor fuel, are preparing to make specific recommendations before the Office of Production Management in Washington, D. C., next Monday. A reduction of 3 octane numbers in civilian motor fuel seems imminent.

Elimination of tetraethyl lead from the competitive-grade gasoline, a general reversion of the octane trend in all automobile-engine fuels, and use of lower quality fuel for aviation training are among the suggestions refiners are considering.

Necessity for a drastic change in the manufacture of civilian motor fuel arose recently when shortages developed in raw materials essential to the preparation of tetraethyl lead. Furthermore, there is a growing demand for lead in the defense program and lend-lease committments. Also, officials of OPM and OPC are anxious to increase the stocks of tetraethyl lead to a point where at least 1 month's requirements are in storage.



Although civilian supplies of tetraethyl lead will be cut during the next 4 months, civilians will receive more than half the total production. This graph shows accumulative proportions

Allocation of tetraethyl lead supplies among refiners in proportion to their respective purchases during the past year announced this week climaxed events of the past 15 days. A weighted average of 72.8 per cent of normal purchases of tetraethyl lead during December and through the first quarter of 1942 will be available to civilian consumers.

Application of the program already has been started by Ethyl Gasoline Corp., which sent the following telegram, in part, to its customers, supplementing its letter of November 14:

"It is necessary in any system of allocation to make some basic assumptions as to production rates and demand even though neither can be guaranteed under present conditions. The following system of allocation is suggested for consideration by the regional committees of the petroleum industry in consultation with OPM and OPC. Until advice from these sources is received we are proceeding on the basis proposed herewith.

PROPOSED DISTRIBUTION OF TETRAETHYL LEAD PRODUCTION OVER NEXT 4 MONTHS

(Data in pounds)

Month—	Defense requirements	Inventory additions	Civilian uses	Distribution Pct.*
December	2,800,000	2,040,000	7,120,000	82
January	3,110,000	2,370,000	6,520,000	70
February	3,700,000	2,490,000	5,730,000	67
March	4,200,000	390,000	7,350,000	71

*The weighted average of civilian distribution in this period is 72.8 per cent of normal. The allocation to December 31 will be 80 per cent. For January, February and March, 1942, it will be 70 per cent.

"We assume that until some time subsequent to April 1 next, when we hope to have additional chlorine and lead supplies available, our production can be maintained at the current restricted level of approximately 12,000,000 lb. per month."

"Each customer's percentage of total nondefense business during the base year November 15, 1940 to November 15, 1941," the wire continued, "will be determined. This percentage will be applied to the total amount of tetraethyl lead available for distribution during each month to fix the number of pounds for nondefense business to which the customer is entitled in that month.

"The amount to which each customer is entitled in each month will be entered on our books to his credit. All shipments to him will be charged against this credit. To the extent customers are physically unable to make uniform deliveries they may overdraw their accounts from time to time overdraft to be met out of their subsequent monthly allotments.

Want 16,000,000-lb. Inventory

"New customers and old customers who have radically changed the basis of their business may receive allotments or have their allotments adjusted as equitably as possible to the end that the reduction in their deliveries below their present actual requirements should correspond to the current reductions below actual requirements of the other customers. It is assumed that in cooperation with the governmental authorities the present regional machinery of the petroleum industry will set up some method of dealing with such requests for new allotments and adjustments originating in each region. Any net increase in shipments resulting from such new allotments and adjustments in any month would have to be compensated by reduction in the basic percentage allotment for all customers in the ensuing month.

"Because of the seasonal changes in requirements, our inventory must be built up during this part of the year and reduced during the later months. We assume we should not permit inventories to drop below 1 month's production at any time and under present conditions we believe higher inventories are desirable. We therefore contemplate working toward a minimum inventory figure of 16,000,000 lb."

With these data before them, refiners in each of the five districts will hold meetings within the week and will make their formal recommendations available for consideration by the OPM on December 8. A likely proposal is for temporary legislation whereby a uniform method for reducing the octane value of gasolines throughout the country might be worked out and to accomplish this uniformity without refiners being subjected later to accusations that they had effected the reduction by "collusion."

Obviously, the reduction in the lead available to refiners will automatically cause a reduction in the average octane value of gasoline. On the

basis of the allocations suggested here the average drop will approximate 3 octane numbers. To equalize this, the refiners in Group 2 and Group 3, who will be the first to meet, probably will ask that they be allowed to work among themselves to effect this reduction in the octane ratings of their respective grades and to police the values within the respective areas without fear of later federal charges of collusion.

The decision of the OPM on this point will probably be heard December 8 when a joint meeting of the chairmen and vice chairmen of the committees handling this subject in each of the five districts will meet in Washington with the OPM for final action.

Preliminary to this meeting the individual committees are studying such suggestions for conservation of lead as: (1) discontinuing the use of lead in third-grade gasoline; (2) provide a 92-octane fuel for aviation training instead of 100-octane fuel, and (3) have the timing on cars retarded to enable motorists to burn the lower grade fuels.

The latter suggestion is made with the knowledge that any move in that direction will automatically cause the consumption of gasoline to increase but it is offered in view of the immediate need to subordinate civilian use to the task of increasing stocks of 100-octane gasoline and making larger quantities available for defense before the benefits of a large refinery construction program can be felt.

Recognizing the need to add substantially and quickly to production and stocks of 100-octane aviation fuel, the Joint Army and Navy Aeronautical Board this week agreed to permit 4 cc. of tetraethyl lead to be blended with each gallon of base stock to make 100-octane gasoline instead of limiting the quantity to 3 cc. as in the past. This increases the potential output 15 per cent.

Also, the OPM has issued high priority ratings on plants under construction for the manufacture of 100-octane aviation gasoline components. These include:

Company and plant location—	Type of plant
Shamrock Oil & Gas Co.:	
Amarillo, Tex.	Isobutane
Atlantic Refining Co.:	
Philadelphia, Pa.	100-octane
Standard Oil Co. of California:	
Richmond, Calif.	Special cracking unit
Union Oil Co.:	
Los Angeles, Calif.	Special cracking unit
Standard Oil Co. of Ohio:	
Toledo, Ohio	Isopentane
Union Oil Co.:	
Wilmington, Calif.	Isopentane
Shell Oil Co.:	
Wilmington, Calif.	Isopentane
Houston, Tex.	Hydrocodimer
Wood River, Ill.	Isopentane
La Gloria Corp.:	
Corpus Christi, Tex.	Isobutane
Phillips Petroleum Co.:	
Borger, Tex.	100-octane
Gulf Refining Co.:	
Port Arthur, Tex.	Base stock
Shell Development Co.:	
Emoryville, Calif.	Pilot plant

Isopentanes and hydrocodimers are blending agents. Isobutane is one of the raw materials from which blending agents are produced.

Other aviation gasoline plants already building include: Shell Oil Co., Norco, La.; Standard Oil Co., Toledo, Ohio; Standard Oil Co., Whiting, Ind.; Texas Co., Port Arthur, Tex.; Gulf Refining Co., Port Arthur, Tex.; Standard Oil Co., El Segundo, Calif.; Tide Water Associated Oil Co., Avon, Calif.; and Humble Oil & Refining Co., Baytown, Tex.

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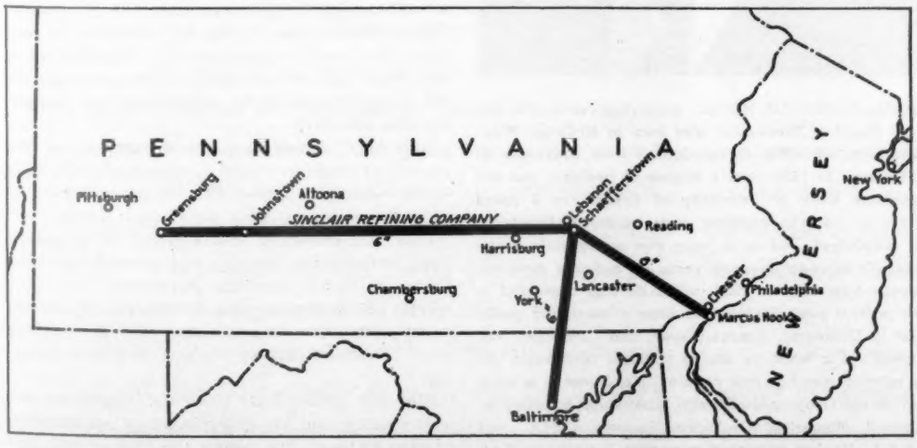
Sinclair Builds Gasoline Line Across Pennsylvania

CONSTRUCTION is now in progress on a gasoline pipe line acress Pennsylvania for Sinclair Refining Co. The line will extend from the company's refinery at Marcus Hook, Pa., to the Pittsburgh area. This line will have a total mileage of 260 miles, consisting of 66 miles of 8-in. between Marcus Hook and Schafferstown, Pa., which is 30 miles east of Harrisburg and 18 miles north of Lancaster, Pa., as well as 194 miles of 6-in. between Schafferstown and Greensburg, Pa., which is 25 miles southeast of Pittsburgh. In connection with this system a 6-in. line will be laid from Schafferstown to Baltimore, Md. The location and number of the pump stations has not been determined.

Preparations for building the line have been carried on since the early part of the year. Work of surveying the line, acquiring right-of-way and construction has been under the direction of W. W. Baker, vice president. Headquarters have been established at 400 Blackstone Building, Harrisburg, Pa.

Laying of sections of the line amounting to more than 170 miles which have been contracted already is being handled by Sheehan Pipe Line Construction Co. and O. C. Whitaker Co.



Map of route of gasoline pipe line Sinclair Refining Co. is building in Pennsylvania

G. L. Brennan Named to Head L.P.G. Division of Warren

Effective December 1, G. L. Brennan is in charge of the liquefied petroleum gas division of Warren Petroleum Corp., Tulsa, according to an announcement by H. E. Felt, vice president of Warren. Mr. Brennan has been with Phillips Petroleum Co. for nearly 13 years, resigning as assistant manager of the special products department of that company to accept his new position.

Mr. Brennan was born in North Dakota in 1896, and was graduated from University of North Dakota in 1919 with a degree of bachelor of science in mining engineering. He joined Phillips in 1929, his first work being that of making a survey of liquefied petroleum gas marketing conditions. He

G. L. BRENNAN

was made sales manager of the liquefied petroleum gas division of Phillips, which supplied public utilities, and later became manager of wholesale sales to industrial and utility companies located in the Detroit area.

When Phillips Petroleum Co. organized its special products department in July 1940, Mr. Brennan was made assistant manager, with headquarters in Bartlesville, the position he has held since. He is married and has two children.

Warren Petroleum Co. entered the liquefied petroleum gas field in 1935, when its sales totaled 55,000 gal. In 1940 the sales were more than 47,000,000 gal. The liquefied petroleum gas division is headed by Mr. Felt, whose staff consists, in addition to Mr. Brennan, of Fred J. La Fortune, P. J. Hoagland, Allen S. James, and Kenneth T. White.

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Industry Committee Named To Study Container Shortage

A special oil-industry committee on containers is being appointed by the Office of Petroleum Coordinator to formulate definite recommendations for conserving critical materials used in containers and adopting substitutes where possible.

Need for such a special committee developed during last week's conference of marketing committeemen in Washington, D. C., when OPM officials outlined the growing scarcities in the container field. The special committee will be empowered to recommend price differentials and allowancs necessitated by the use of more expensive and heavier containers.

STATE CAPITALS...

CALIFORNIA

THE CONSERVATION COMMITTEE of California Oil Producers at its regular monthly meeting last week voted to retain the November oil production allowable of 613,200 bbl. daily during December. A reduction of 2 bbl. per well per day from top wells, with an equivalent total amount from intermediate wells was voted to make room for new production of 3,221 bbl. per day from wells completed during the month.

Joseph Jensen of the Tide Water Associated Oil Co. presented statistics from the U. S. Bureau of Mines and the Oil Producers Agency to point out that production of light oil was overbalancing the industry's economic position. The Oil Producers Agency figures he presented showed that while total oil storage declined during all of 1940 by 6,902,000 bbl., there was an actual addition of 1,388,000 bbl. to light oil and light-oil products storage, offset by a withdrawal of 8,290,000 bbl. for heavier products.

Mr. Jensen said that he believed that conditions during the succeeding months had not been materially different from those of August and September and that he felt it was necessary to reduce the production of light crudes to prevent complete unbalancing of the industry's storage position.

OKLAHOMA

STILL BELOW estimated market demand, Oklahoma's allowable production was set at a total of 428,000 bbl. daily for December, the same figure that has been established by the Corporation Commission each month since September. The U. S. Bureau of Mines estimated the demand for the state's oil for December at 460,000 bbl. daily, while current production has been averaging only about 427,000 bbl. a day.

Only changes made in the new proration order were in adjustments for individual fields caused by local conditions. A continuation of the trend for production in the eastern areas to fall off about as fast as new western pools increase was evident, but was not as pronounced as in the November order. Development of the western pools, notably Apache and Cement in Caddo County, had slowed down pending completion of new outlets.

EXTENT OF WELL PLUGGING attributable to pegged crude prices in the face of rising costs and scarcity of materials was still undetermined last week. However, officials of the Corporation Commission were sufficiently concerned to instruct deputies to make a systematic check of well plugging in their districts to determine whether there has been an increase because of desire to salvage equipment.

WIDER SPACING of wells was urged as a defense conservation measure last week by W. J. Armstrong, member of the Corporation Commission. Support of operators in a generally wider spacing program and particularly in lime producing areas was essential since state law requires that at least 80 per cent of the lease owners agree when wider than 10-acre spacing is set up.

ILLINOIS

APPOINTMENT OF S. F. PETERSON, of Aurora, Ill., as petroleum engineer for the state Division of Oil and Gas Conservation has been announced by Gov. Dwight H. Green.

The title "petroleum engineer" replaces the former name by which Mr. Peterson's position was known—"chief production engineer." Duties of the office, however, are the same—chiefly super vision of drilling and plugging of wells.

Selection of Mr. Peterson was approved by Dr. M. M. Leighton, chief of the state Geological Survey division. Only three other officers of the division have been confirmed. They are G. C. Cur tis, of Oblong, division superintendent; Edward Alexander, Jacksonville, personnel chief; and Robert Jean, of Anna, who has been promoted from the position of permit-issuing officer to assistant superintendent.

A TOTAL of $1,069,709 has been paid under protest by 25 oil firms and individuals challenging constitutionality of the Illinois 3 per cent oil-production tax.

The first of the series of suits, each of which attacks virtually every section of the act, was filed 2 months ago in Sagamon County Circuit Court.

Court officials predicted the test suits will be set for a hearing some time in December.

MISSISSIPPI SUPERVISOR . . .

HUGH McDONALD MORSE, supervisor, state Oil and Gas Board of Mississippi, was born in McComb, Miss., December 16, 1898. He graduated from University of Oklahoma in 1925, with a degree in geology, and did graduate work at University of Texas. For 3 years (1930-33) he was assistant state geologist, University of Mississippi, and for a year was acting state geologist. He served four more years as assistant state geologist from 1934 to 1938, when he was appointed to his present post. He has also been a consulting geologist in Oklahoma, Kansas, Texas, and California, and served for a while as mining engineer in Nevada. He is married and has four children. Mr. Morse is a member of the Geographic Society, Mississippi Academy of Science, Mississippi Geological Society, A.I.M.E., and I.P.A.A. He has published numerous bulletins and reports, and maps of Mississippi

TEXAS

STATEMENT OF POLICY with reference to production and distribution of oil in the state was issued by a majority of the members of the Railroad Commission last week. It was signed by Commissioners Jerry Sadler and Olin Culberson, and was made public after the commission received a letter from U. S. Sen. W. Lee O'Daniel who said he had received many requests from citizens of Texas asking him to do everything he could to help get the price of Texas crude raised by at least 35 cents a barrel and to have the volume of oil production increased.

In response, the commission's statement said: "The allowables of Texas, so far as we have a voice, will be raised only where there is a national-defense demand from the proper and authorized sources for those types of crude which are refined into high octane ratings for fighting equipment. . . ."

Chairman Ernest O. Thompson also issued a statement, but expressed an opposing policy in which he declared himself in favor of "more liberal allowables."

STATE-WIDE PRORATION hearing to take evidence on which to base production schedules after December 31 was set for December 15.

KANSAS

SPECIAL ATTENTION of operators, purchasers and producers of crude oil in the state was called by the Corporation Commission this week to revised rules and regulations for the taking of potentials and producing wells. Last week the commission distributed notices emphasizing certain of these rules. They were:

Rule 106, prescribing that potentials must be taken at 12-month intervals. If, due to some act or omission of the operator, more than 12 months elapse between the taking of potentials on any well, that well is automatically classified as a minimum well and can produce no more than 15 bbl. a day. Provisions for adjustment and changes are also set forth.

Rule 111-C, requiring a sworn statement of the amount of crude produced by each and every well to be submitted to the director of conservation on or before the fifteenth day of each month.

Rule 114, requiring identification of all petroleum transporting vehicles and prescribing rules for reporting all petroleum shipments.

Rule 115, authorizing the director to require detailed information on acidization of wells, perforation, directional drilling surveys and tank cleaning.

Rule 109, setting forth rules and regulations for well spacing and requiring proof of attributable acreage to be on file before the date of any initial productivity test.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Needed Step

Our position in regard to the Petroleum Industry Council for National Defense, appointed Saturday by Petroleum Coordinator Ickes, has been indicated several times in recent months. In June when the OPC was established, this page stated "the time has arrived for the organization of a petroleum board which, cooperating with Washington, will assure the maximum utilization of the industry's numerous services in the emergency which daily becomes more pressing."

Again in September, after there had been widespread evidence of the need, a plea was made for "a representative group of leaders who could speak for all operators whenever necessary."

There has been steady progress in perfecting the Government's machinery centering in the Office of Petroleum Coordinator, designed to coordinate the activities of the petroleum industry in relation to the defense program. The industry's functional committees, now totaling more than 250 operators, have aided as advisers.

The new petroleum council is the additional step required to round out the cooperative program of the Government and the petroleum industry. Plans call for meetings at regular intervals. A committee from the council will be in Washington continuously if necessary.

All geographical areas, all divisions and large and small operators are represented. Through the wide experience represented in the membership the council should be able not only to advise but also initiate in matters which will best serve the interests of the nation.

The new organization has the example of the National Petroleum War Service Committee of the previous World War, showing what can be done with a minimum of red tape. That committee so directed the industry's operations that every war requirement was supplied with little inconvenience to civilian users of petroleum.

Operations have more than quadrupled since 1917-1918 and that fact is reflected in the responsibilities confronting the industry. But a strong industrial leadership now, as then, will emerge from this crisis meriting the same acclaim as two decades ago, with major credit for victory to oil. The appointment of the council is the most important oil development of the present emergency.

•

Postpone the Exposition

It seems to be the part of wisdom at this time for the directors of the International Petroleum Exposition to decide upon a postponement of the show scheduled to be held in Tulsa next May.

The industry and hundreds of allied enterprises which manufacture and distribute supplies are now working under emergency conditions. At the Government's request, every energy is bent toward the manufacture of items for this industry and items for defense. The temper of the times is against idle items for exhibit. In the same vein, the demands upon manpower—military and industrial—would seriously affect attendance.

The International Petroleum Exposition is the permanent market place of the oil industry. It should stand ready to reschedule at the first favorable opportunity. In the meantime, with 87 per cent of the space already sold for next May, a postponement would naturally call for support to the end that exhibitors would consider the International Petroleum Exposition their first oil-show obligation.

It is a safe prediction that this loyalty will be readily forthcoming and that the soundness of the step at this time will gain much in good will and future prestige for the exposition.

Henderson Outlines Procedure For Obtaining Price Increases

By HENRY D. RALPH

WASHINGTON, D. C., Dec. 1.—Procedure by which price increases for petroleum and petroleum products may be obtained, if "reasonable and justified," was outlined in a letter to "members of the industry" late last week by Price Administrator Leon Henderson.

The first intimation that the price administrator would grant any of the numerous requests for permission to raise prices because of increased labor and material costs and in order to increase exploration and development of new petroleum reserves was contained in this letter. It was described by the OPA as a "clarification" of Mr. Henderson's sweeping order of November 7, freezing all crude-petroleum prices as of October 1, and products prices as of November 7.

"The purpose of the request to observe the prices in effect as of November 7 was to prevent any further unauthorized price increases," he explained. "It was not the intent to prevent any reasonable and justified price increases, provided proposals for such increases are first submitted to this office with proper and adequate data."

Mr. Henderson stressed the point that no approval of prices prevailing on November 7 was implied, pointing out that any such approval must necessarily await the investigations now being made by the OPA into crude, refining, marketing, and other costs and prices.

Major concern of the industry was left unanswered last week in the letter clarifying policies of the Office of Price Administration which outlined procedure through which applications should be made for authorization to raise markets.

No mention was made in Leon Henderson's open letter to the various applications now pending, including that from the Pennsylvania region which was filed in August and that from Phillips Petroleum Co. held in abeyance since October 15. On October 27, the I.P.A.A. filed a resolution calling for higher crude prices and a brief showing cost increases which has not been acted upon. Main point in the price administrator's declaration of policy was that he will not prohibit advances if the industry can justify higher prices on the basis of cost and other relevant factors.

Data to Accompany Request

Any request for a price increase based on advancing costs of production, transportation, labor, material and marketing and other expenses, he stated, should be accompanied by four types of data. These types were listed as follows:

"1. Price history from January 1, 1940, to date for the product on which increase is proposed showing date prices revised and changed prices on those dates.

"2. Comparative statement of actual costs (not theoretical costs) indicating increases and dates they were effective with supporting data showing how costs were figured.

"3. Comparative profit and loss figures showing earnings before income taxes. The earnings figures to cover nearest period for which data available compared with the same period for previous year, viz., 9 months 1941 compared to 9 months 1940, and also for the full year 1940.

"4. Statement of conditions resulting in increased costs and necessity for increased prices."

Prices may be reduced below the net posted price existing on November 7 in order to meet competition and may move upward subsequently to the November 7 level to follow competition without any notification to OPA, Mr. Henderson declared.

Renewal of contracts which were based on prices prevailing at the time the contract was entered into or new contracts may be made at the net posted price existing on November 7, or on prices increased since that time, provided increased prices have been approved by the OPA.

In the event of any changes in marketing practices which might tend to result in price increases, information should be furnished to OPA prior to changing such practices covering the following points:

"1. Complete statement of conditions and practices prevailing prior to proposed changes, length of time such practice in effect, and necessity or reasons for making such change.

"2. History of prices prevailing under conditions outlined under 1.

"3. Increased prices or increased cost to purchaser resulting from proposed change."

OPA Questionnaire on Fuel Oil

Products upon which proposed price increases must be presented to OPA, the letter states, include crude petroleum, all grades of gasoline, kerosene including range oil and stove oil, distillate fuel oils, residual fuel oils, asphalts, lubricating oils, including motor oils and stock oils (neutrals, bright stocks, steam-refined oils, etc).

This does not include for the time being, industrial lubricating oils, greases, compounded oils, specialty products, etc. Mr. Henderson warned, however, that OPA will closely watch prices of these products.

"It is hoped," he said, "that these prices will not assume an inflationary trend, in which case steps will necessarily have to be taken to bring them under more rigid control."

Included in the November 7 request, Mr. Henderson explained, are crude-oil producers; crude-oil purchasers, including refiners and pipe-line companies; and marketers, including integrated and nonintegrated companies, terminal operators, jobbers, peddlers, service-station operators, and all other retail outlets.

"The Office of Price Administration," he said, "is arranging to give prompt decision on applications for price increases, providing such applications are accompanied by complete and adequate data to support the necessity or reason for the proposed increase. It is requested that proposals for price increases be presented as far in advance as possible to give reasonable time for analysis of the applications and the obtaining of any additional information required.

"Consideration is now being given to the interpretation of the November 7 request regarding prices applying to formal bid transactions. As soon as details are available, this interpretation will be released to the industry.

"Supplementary releases will be issued from time to time to keep the industry advised of additional information as it is developed and to answer inquiries that are of general interest."

Products Included in Procedure

Mr. Henderson's letter to the industry came while he was in the midst of a barrage of requests and demands for increased prices coming from all sectors of the petroleum industry and from practically every congressman and senator representing oil-producing states.

Meanwhile, OPA has sent out a questionnaire to representative distributors of fuel oil in the eastern states, concerning sales, prices and costs of their operations for the 2 years ended November 1, 1941.

Stating that all information submitted is for the "confidential use of defense agencies," details are requested on the following:

Inventories as of May 31, 1941, compared with June 1, 1940, and purchases between the same dates.

Total expenditures for purchased oil and freight paid.

How the oil was delivered, and figures on sales to consumers, resellers, at retail.

Amounts paid suppliers per gallon periodically from November 1, 1939, to November 1, 1941, and costs per gallon laid down at the distributors' plants during the same time. These figures are to be given separately for deliveries by tanker, barge, tank car, truck transport, and tank wagon.

Periodic figures during the 2-year period on price per gallon received for oil sold for home consumption; for oil sold to resellers, divided into sales from tank trucks and tank cars; and for oil sold to industrial and commercial accounts, also divided into deliveries by tank car and tank truck.

Gallonage sales of different grades of oil for the first 9 months of 1940 as compared with the same period in 1941, and dollars received during the same periods.

A similar questionnaire is now being prepared for distribution to major company representatives and independent marketers in about 75 cities throughout the country.

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WHO CAN RESIST a pretty girl and a game of Blind Man's Buff? It is a grand game. Yet, this sweet game and completing an oil well have one thing in common. You are blindfolded. You have to guess.

And sometimes you guess wrong. Sometimes you set pipe too low or too high and get too much water and not enough oil. Blind Man's Buff is a game to play in the parlor—*not on your oil wells.*

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OKLAHOMA: OKLAHOMA CITY

International

Soviet Oil Fields Still Far Beyond Grasp of Germany's Invading Forces

PRESENCE of German armies in Crimea and on the northwestern borders of Caucasia, where Russia's major oil-producing fields are situated, does not imply that the Soviet Union is in immediate danger of losing its petroleum supply. The farthest points of German penetration on the southern front are Rostov on the Gulf of Taganrog, northeast of the Sea of Azov, and Kerch, easternmost city on the Crimean peninsula. Of the two, Kerch is the nearer to any of the Caucasian fields. From Kerch to Maikop, most western field in southern U.S.S.R., the air line distance is approximately 180 miles.

If the Germans should occupy Maikop, the conquest of the Caucasian oil fields would have only begun. The Grozny-Dagestan fields logically would be the next goal since they, with the Siazan, are the only others north of the Caucasian Mountains. The Grozny-Dagestan fields run almost continuously from northwestern Checheningush east to the Caspian and southward along its shore almost to Derbent. The western extreme of this producing area is 350 air miles from Rostov and 425 miles from Kerch. The Siazan field, a comparatively new discovery, is also on the shores of the Caspian, about 75 miles south of the Dagestan fields.

Production of these so-called northern fields is only about 20 per cent of the total for the entire trans-Caucasian area. The remainder is produced south of the Caucasian Mountains, chiefly in the Baku fields on the Apsheron peninsula in eastern Azerbaijan. These fields are not only farther from the most advanced German points—more than 700 miles from Rostov and nearly 800 miles from Kerch—but are also protected by the greatest natural barrier to invasion in Europe, the Caucasian Mountains.

The possibility has been advanced that the Germans may strike across the upper part of the Caucasus from Rostov to Astrakhan, thereby isolating it from the rest of the country. Astrakhan is a Caspian port on the delta of the Volga. This would not necessarily deprive Russia of Caucasian oil since the bulk of the oil fields are on the shores of the Caspian or adjacent to them. This oil could be transported across the sea to the North Caspian port of Guirev which is connected to the refinery center at Orsk by a 12-in. pipe line.

Complete loss of the Caucasian oil fields would not deprive Russia of sufficient oil to prevent it from prosecuting the war. The Emba region fields, north and east of Guirev, which now supply refineries there and at Orsk, and the fields of the Ural-Volga basin in Bashkir would still remain. Because of their comparative security, Russia has concentrated its oil exploitation in that area. Refineries at Ufa, supplied by pipe line, and at Kuibishev, the new capital, supplied by rail, have a combined capacity of some 40,000 bbl. per day. Other refineries at Saratov and Gorki have even greater capacity and the latter could be supplied, at least in part, by the new Ivanovo fields, 125 miles to the northwest. Production is obtained in some of the Ural-Volga fields at depths of less than 1,000 ft., and these fields could be developed rapidly with portable rigs, many of which have been shipped from the United States in recent months.

Since invasion of Russia, Germany has seized a number of oil properties including three refineries and several small fields. The refineries are at Odessa, Kherson, and Berdyansk. They had a combined capacity of 15,000 bbl. a day, a small fraction of the country's total. The fields which Germany acquired were in the Borislav area which the U.S.S.R. had gained in the division of Poland at the outset of the war and Romny and Poltava in North Central Ukraine.

Germany's conquest of the Ukraine and Crimea has given it control of the western part of the Black Sea and has deprived the Baku fields of an appreciable market. Both crude and refined products were transported from Baku to Batum on the Black Sea through 10-in. and 8-in. lines, respectively. Part of this crude was processed at the Ukrainian refineries now in German controlled territory. The refineries, all located at seaports, were supplied by tanker. Loss of them and most of the Black Sea market has been at least partially responsible for the decline in Soviet production which has dropped Russia from second place to third among the world's oil-producing nations. Venezuela now ranks second to the United States in this respect.

The first oil objective of the German troops in an invasion of the Caucasus would be the refinery at Krasnodar, 125 miles east of Kerch, which is supplied through a 60-mile, 8-in. pipe line from Maikop. It is larger than the three Ukrainian refineries combined but its loss would likewise represent a comparatively minor blow to Russian resources. Other refineries at Baku, Grozny, Batum, and Makhach-Kala have a combined capacity that dwarfs that of the western refining plants. Besides the Caucasian refineries and those at Ufa, Kuibishev, and Orsk there are others at Yaroslavl, Gorki, Moscow, and Saratov. The latter, incidentally, is adjacent to the new field near Syzran from which oil could be barged down the Volga River.

Venezuela . .

Standard and Lago Complete Seven Wells—One Gas, Six Oil

STANDARD OIL CO. OF VENEZUELA and Lago Petroleum Corp. completed seven wells in Venezuela in September. They included one gas well in the Mulata area which produced 1,200,000 cu. ft. per day from 4,100 ft. Oil wells were in the Jusepin area where one well with an initial of 100 bbl. was completed at 4,373 ft.; one at Lagunillas with an initial of 470 bbl. at a depth of 6,239 ft. and four in the Tia Juana area which averaged 3,606 ft. in depth and had an average initial of 1,094 bbl. daily.

Standard of Venezuela produced an average of 101,071 bbl. per day during that month. Lake fields produced 7,140 bbl., other western fields 4,696 bbl., and eastern Venezuelan fields 89,235 bbl. daily. Lago Petroleum Corp. production averaged 224,446 bbl. per day, 218,915 bbl. from Lake fields and 5,531 bbl. from eastern fields.

Exports of the two companies in September totaled 3,134,634 bbl. for Standard and 6,949,412 bbl. for Lago.

Burma . .

Rate of Crude Production Continues Downward Trend

PRODUCTION of crude oil in Burma during the first quarter of this year totaled 1,882,900 bbl., a rate that would indicate output for 1941 will total about 7,600,000 bbl.

Yield for the first 3 months this year was 23,000 bbl. below the output for the same period in 1940, indicating that the gradual decline in production from Burma which has prevailed for some time will be continued.

Chile . .

National Petroleum Body To Study Country's Needs

THE National Petroleum Supply Committee, created by the Chilean Government in a recent decree, is charged with the duty of determining the national needs for petroleum products and with the function of indicating what types should be imported. The committee will collaborate with the Petroleum Supply Committee for Latin America in Washington, D. C., with a view to coordinating all available transportation and port facilities.

Mexico . .

Tampico to Manzantillo Pipe-Line Talk Revived

ANNOUNCEMENT that the Mexican Government would build the oft-rumored pipe line from Tampico to Manzantillo was made last week by Efrain Buenrostro, manager of Petroleos Mexicanos, the government-controlled oil agency. The line would pass through Celaya and Guadalajara and would be approximately 620 miles long.

Extensive exploration work in 1942 is also planned. It was reported that $2,000,000 would be allotted for exploratory work in Lower California and on the Mexican side of the Rio Bravo between Laredo and Tia Juana. The government agency continues its program of retrenchment by the reported dismissal of 5,000 oil workers.

No priorities

No priorities limit the application of experience to solve refining problems The "know how" of successful operating is not officially rationed There is no restriction on the use of brains

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Drilling Cost Deduction May Be Clarified By Law

WASHINGTON, D. C., Dec. 1.—Legislation to authorize the deduction of intangible drilling costs from income taxes will be introduced in Congress unless the Internal Revenue Bureau permits these deductions and reverses its "confidential instructions" to its field offices informing them to disallow such deductions, it was learned today.

Sen. Tom Connally, of Texas, is prepared to offer such legislation, probably in an amendment to the administrative tax bill due to come before Congress in January, he declared tonight.

Senator Connally, ranking member of the Senate finance committee, has urged Commissioner Guy T. Helvering, of the Internal Revenue Bureau, to disregard recent decisions of the Board of Tax Appeals, holding that contract drilling costs were not deductible, and to issue a ruling permitting such deductions.

He forwarded a report to Mr. Helvering prepared by Colin F. Stam, chief of staff of the joint committee on internal revenue taxation, and one of the nation's foremost tax experts, in which Mr. Stam expressed the opinion that the present statute is broad enough to uphold a ruling by the commissioner "to prevent this harsh and inequitable result."

Mr. Stam's report was prepared at the request of the Texas senator, following the submission of numerous protests against the proposed ruling by Dale Miller, representing the Dallas Chamber of Commerce.

One of the difficulties with respect to the decisions of the Board of Tax Appeals upon which the "confidential instructions" were based, Mr. Stam stated, is that the board has on several occasions questioned the option granted by the regulations to expense intangible drilling and development costs.

"I believe that the regulations should not restrict the benefit of the option to the company drilling its wells and deny it to the company having its wells drilled by an independent contractor," Mr. Stam stated, after reviewing the various court decisions on the subject.

"It would appear inequitable and seemingly harsh to allow one taxpayer to exercise the option where he purchases the material, employs workmen, and drills and equips the well, and deny the option to another taxpayer merely because he performs the drilling through an independent contractor.

"This would favor the large oil companies, who could perform their own drilling as against the smaller companies who could not perform their own drilling," he continued.

"The statute is broad enough to give the commissioner power to prevent this harsh and inequitable result by the promulgation of a proper regulation. I feel, therefore, that the matter should be brought to his attention so that this unjust situation can be remedied."

Describing the proposed ruling as "an unjust and injurious discrimination against the independent drilling contractors, who would be virtually legislated out of business," Senator Connally pointed out that it would be equally injurious to oil companies, which would be heavily burdened by the expense of acquiring and maintaining expensive drilling equipment.

"The companies would also suffer economic loss," he declared. "Moreover, fewer new fields would be explored and fewer holes dug, thus obstructing the progress of an industry vital to national defense—and all for no good purpose."

"I am asking Commissioner Helvering of the Bureau of Internal Revenue for an assurance that this proposed interpretation will not be adopted," he continued. "Uncertainty over the board's decision has already created an unsettled and disturbed condition in the petroleum industry, and the bureau's policy should be stated clearly without delay."

Crude Runs to Stills Are at Highest Rate in Oil History

Daily average crude runs to stills set a record of 4,049,000 bbl. in September, which was 31,000 bbl. higher than in August, and 457,000 bbl. above runs in September 1940, according to a report prepared by the Bureau of Mines. Daily average imports, although 15,000 bbl. higher than in August, were still considerably below the high of July. Crude-oil stocks at refineries continued to decline, dropping 1,583,000 bbl. to 51,188,000, which is 5,687,000 less than the peak reached at the end of August 1940.

Although daily average receipts of domestic crude at refineries in September receded 4,000 bbl. from the August peak to 3,853,000, this was 499,000 bbl. higher than the receipts in September 1940. Although there were only slight changes in the totals for intrastate and interstate receipts, daily average intrastate receipts in California declined 54,000 bbl. The reversal from a downward to an upward trend of Illinois deliveries, which occurred about the middle of the present year, became more pronounced during September with a gain of 73,000 bbl. daily.

The greatest gains in daily average deliveries to refineries occurred in Illinois, Wyoming, and Kansas, amounting to 72,000, 20,000, and 14,000 bbl., respectively. Deliveries of crude oil from California, Texas, and Arkansas declined 54,000, 46,000, and 15,000 bbl., respectively. Intrastate pipe-line deliveries established a new record at 2,104,000 bbl. daily, 63,000 bbl. higher than for August and almost 300,000 bbl. higher than for September 1940.

Inglewood Operators Face Culver City Municipal Tax

CULVER CITY, Calif., Dec. 2.—Some operators in the Inglewood field of Los Angeles County, California, will begin paying a new tax January 1, 1942. The Culver City Council has adopted and passed a severance tax of 0.5 per cent of the gross receipts resulting "from the production of each of such wells operated within the city limits of Culver City." A portion of the Inglewood field is located within the corporate limits of Culver City. Operators in a part of the Inglewood field will then pay a severance tax to Culver City and the remainder, located in county territory, are not involved. This tax is called a license tax by the Culver City Council and the bill specifically states that "The license fees herein provided are intended and shall be collected for revenue purposes only and not for the regulation of the business covered hereby." This prevents any action from being taken to test the validity of the measure as money collected for revenue purposes is valid and not subject to court interpretation.

Types of Valves and Pipe Fittings to Be Reduced

Types of valves and pipe fittings will be reduced beginning January 1, 1942, according to announcements last week from the National Bureau of Standards of the U. S. Department of Commerce. Purposes of the reduction is to increase the efficiency of manufacturing plants during the defense emergency through the greater standardization of products.

The simplified schedule for valves recommended stocking of ⅛ to 3-in. brass valves in 100, 125, 150, 200, and 300-lb. per sq. in. working-pressure ratings. Iron valves 2 to 12-in. size, inclusive, are recommended in 125 and 250-lb. pressure sizes and iron valves 3 in. and smaller are recommended in 150-lb. pressure rating.

Production for stock is recommended for but 1,311 of the 4,964 types of gray cast-iron fittings formerly manufactured. Types of malleable-iron fittings were reduced from 2,331 to 1,169 and brass and bronze screwed fittings were cut from 1,271 to 487.

FPC Hearing United-Memphis Rate Case in Washington

The Federal Power Commission started hearings Thursday on application by the United Gas Pipe Line Co., Shreveport, La., requesting that its rate schedule providing for the sale of natural gas to the Memphis Natural Gas Co. be permitted to become effective as of August 1, 1940.

The commission permitted the rate schedule in question to become effective as of March 2, 1941, following consideration of a letter agreement between the buyer and seller accepted by the Memphis company on January 9, 1941. The application contends that the agreement, which increased the price of gas to reimburse United Gas Pipe Line Co. for payment of the Louisiana gas-gathering tax, does not constitute a rate, charge or any change in rate schedule and that the commission's failure to make the agreement effective as of August 1, 1940, results in United Gas being penalized in the amount of $27,925.58, on account of its claimed inability to consummate a written agreement until January 9, 1941.

Reduction in Tanker Rates Imposed by Maritime Board

Reduction of 20 per cent in the basic freight rates for the transportation of oil in tankers from United States Gulf or Caribbean ports to East Coast United States ports was announced last week by the Maritime Commission.

The maximum rate in which the commission will concur on fixtures in this service from and after December 1, 1941, is 40 cents per barrel on the basis of gasoline Port Arthur-New York-Port Arthur. Port and product differentials will be announced later. The previous rate was 50 cents per barrel. Until further notice, no change is made in the rates applying to other services, which are covered by the commission's schedule of August 22, 1941.

When the commission announced a scale of maximum time charter rates for tankers on August 25, 1941, it was stated that the rates were subject to further study by the commission.

Illinois Conservation Plan Completed By OPC

WASHINGTON, D. C., Dec. 1.—A conservation plan for the production of crude petroleum in Illinois has been drafted by the Office of Petroleum Coordinator and is expected to be issued as soon as it is cleared by the Department of Justice, which may be within a few days.

While much attention has been given to the negotiations between the West Coast production committee and the OPC in an attempt to evolve an acceptable conservation plan for California, it appears likely that the Illinois plan will be issued first. The California plan is still being studied by OPC, and while the reaction appears to be favorable, final approval is not expected for 2 weeks.

Action by Coordinator Ickes to force conservation practices on Illinois was generally anticipated after the Illinois Legislature declined to enact legislation of the type desired by Mr. Ickes, in spite of a series of conferences and communications between him and state officials. No intimation of the nature of the Illinois plan could be learned beyond a hint that it may follow rather closely the provisions in the Arkansas conservation law which OPC has highly praised as a model for other oil states.

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Shell Oil Co. Names Gage Vice President of Chemical Company

W. P. Gage, 32-year-old manager of Shell Oil Co., Inc., development division, has been appointed vice president in charge of manufacturing and technical development for Shell Chemical Co. In his new position he will be located in San Francisco, Calif., headquarters for Shell Chemical, and will be primarily concerned with improvements and additions to plant facilities for the production of chemical byproducts of petroleum.

Mr. Gage started with Shell in 1929 as a junior chemist at the Wood River refinery near St. Louis and 2 years later was placed in charge of the experimental laboratory. From that time on he served both at the Wood River and Houston, Tex., refineries in various capacities chiefly related to the development of facilities for the manufacture of new and improved products. In November 1939, he was called to head the development division of the manufacturing department.

W. P. GAGE

G. C. CUNNINGHAM

Succeeding Mr. Gage as manager of the development division—manufacturing department of Shell Oil Co., Inc.—is G. C. Cunningham, formerly assistant superintendent at Shell's Houston refinery. Mr. Cunningham joined Shell in 1924 in the laboratory at Wood River. Since then he has seen service at Shell's New Orleans, La., and Houston refineries and in the head office. He became assistant superintendent at Houston in May 1940.

Moving up from manager of the gas department at the Houston refinery to succeed Mr. Cunningham is Albert Garrison. Mr. Garrison joined Shell as a junior chemist in 1929 at Wood River. After serving in various capacities, he was transferred to Houston in 1938 to head the gas department.

Glenn Purcell, senior technologist at the Wood River refinery, moves to Houston to fill the position vacated by Mr. Garrison. Mr. Purcell has been with Shell at Wood River since 1929.

American Tankers May Move Oil Cargoes Direct to Britain

WASHINGTON, D. C., Dec. 2.—American tankers may be sent directly to England, if the Maritime Commission desires, under terms of the amended Neutrality Act. If the commission, which has exclusive direction over voyages of American boats, so desires it may eliminate the British shuttle service, involving transfer of oil cargoes at North Atlantic or Canadian ports.

Direct shipments of petroleum from Gulf Coast ports to England would make for more efficient use of tankers, thereby reducing the possibility of a shortage of transportation facilities for the East Coast. It is understood that the British have now returned the 40 borrowed tankers which they promised at the time restrictions on marketing in the East Coast area were lifted. There are reports that some of the returned tankers may be diverted to the Pacific to carry additional supplies to the U.S.S.R.

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DEATHS

THOMAS J. WRIGHT, 79, veteran holder of oil properties of Venango County, Pennsylvania, and a resident of Chautauqua, N. Y., for the past 10 years, died recently at his home in Chautauqua.

FLOYD RAY PHELPS, 46, independent oil broker, Shawnee, Okla., died in a Shawnee hospital last week after a 4-week illness. Mr. Phelps formerly lived in Tulsa. He is survived by his widow.

SAMUEL WILLIAM GILES, 79, died last week at his home in Bradford, Pa., following an illness of several weeks. He retired as an oil producer in 1929, after having followed this business for more than 30 years. A son and a daughter survive.

WALTER FREDERICK STATHAM, 64, refinery designer, died November 29 at his home in Tulsa of a heart ailment. Mr. Statham was born in Manchester, England, went to Canada in 1913, and was employed there by Imperial Oil Co. In 1917 he came to Tulsa and was associated with the old Cosden Oil Co. His skill as a refinery designer was widely known, and he has designed plants for Cosden, Empire Oil Co., Pierce Oil Co., Sapulpa Oil Co., Independent Oil Co., and other companies. He retired from business 8 years ago. His widow and two stepdaughters survive.

Industry's Leaders Appointed to Serve on Petroleum Council

(Continued from Page 17)

pointments to its membership:

"In order to provide for the fullest cooperation between government and industry in the work of petroleum coordination," wired Coordinator Ickes, "I am at this time creating a national council, to be designated the 'Petroleum Industry Council for National Defense.' This council will consist of a membership of both large and small interests in the industry, geographically so distributed as to insure a truly representative group.

"In view of your very extensive knowledge of the petroleum industry and your broad interest in its operations, I should like to have you a member of this Petroleum Industry Council for National Defense, to serve without compensation during the emergency. Your telegraphic acceptance of the appointment and assurance that we may count upon your attendance at the December 8 meeting will be much appreciated."

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Gas Utilities Division Report

The Texas Railroad Commission has published its 1940 Annual Report of the Gas Utilities Division. This 123-page volume contains a list of the personnel of the division, copy of the gas utility act, report of proceedings, report of engineering activities, auditing department activities, gas-rate schedules, receipts, expenditures, and other data.

Petroleum Industry Catalog

The Foreign & International Book Co., Inc., 110 East Forty-second Street, New York City, has issued its Catalog 267, of sundry publications concerning the petroleum industry. The catalog lists publications in the Spanish, English, Portuguese, French, and German languages.

THE MARKETS*

CRUDE OIL: Clarification of policies with respect to crude-oil prices this week by the Office of Price Administration served to whet the interest in this basic market. Prices throughout the producing states are firm at controlled levels. Conditions indicate that prices would move up promptly with removal of the restrictions imposed by OPA because purchasers are in vigorous search for new connections.

REFINERY PRODUCTS: Conditions in the Gulf Coast gasoline market are slightly easier, reflecting the late-winter outlook if present intentions of the Navy to shift all lend-lease buying to Caribbean countries is made effective. The near-term outlook is unchanged. Most coastal refiners are sold 30 to 60 days ahead of their production schedules.

TANK WAGON AND POSTED DEALER: Resistance to concession prices for tank-wagon deliveries of light fuel oil appeared in the East Coast and Middle West states and general prices in those two major consuming districts have reacted upward. Investigation of the entire marketing structure of the industry from a standpoint of cost is under way by the OPA.

FINANCIAL: Oil stocks dipped more than a point below the opening average and regained only part of their strength. Average of 30 representative stocks for the week ended November 29: High, 27.17; lowe, 26.10; close, 26.69. Week ended November 22: High, 26.97; low, 26.18; close, 26.77.

*Details in the Market Section.

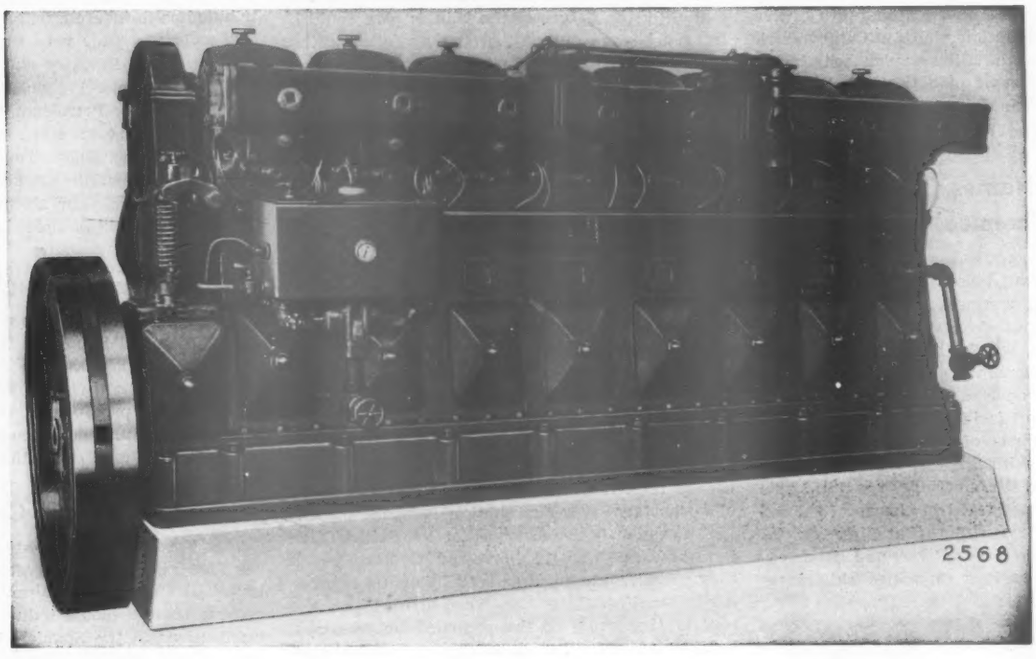
Shipments from Stock

TRANSIT

Vertical 6x9" Gas Engines

2 to 8 Cylinders—27 to 108 H.P. at 600 R.P.M.

Maximum Speed 720 R.P.M.



1. An even and steady flow of power, free from jars, jerks and shocks to the driven equipment. This makes for longer life and lower maintenance costs.

2. *Moderate speed.* These engines operate without the destructive wear and tear inherent to the "High Speed" type of engine.

3. *Flexibility.* Speed can be changed from high to slow speeds and still maintain the same high degree of economy and even flow of power.

4. Quiet and smooth operation makes them ideal units for installation in settled areas, or where noise would be objectionable.

5. Small, compact and self-contained— require small floor space, hence lower building costs.

6. Simplicity of operation—require minimum of attention.

7. *Dependable.* Built rugged and strong to withstand the rigors of oil field service.

8. Economy of operation—unusual fuel economy—low maintenance costs.

9. All moving parts enclosed—automatic lubrication system continuously cleans and cools the oil.

10. In addition to the 8-cylinder units, engines are also furnished with 6, 4, 3, and 2 cylinders.

Write for Bulletin 430-A which explains construction in detail.

NATIONAL TRANSIT PUMP AND MACHINE CO.

Home office and Works OIL CITY, PENNA. Mid-Continent Warehouse 318 East Archer Street TULSA, OKLA.

NEW YORK - PHILADELPHIA - CHICAGO - CLEVELAND - PITTSBURGH - LOS ANGELES - HOUSTON - TULSA

Allied Supply Company, 2068 East 37th Street, Los Angeles, California

The Lang Company 267 West First South St., Salt Lake City, Utah

Standard Supply and Hardware Company 822-838 Tchoupitoulas St., New Orleans, Louisiana

MEMBER

Eugene V. Winter Co., 15 Drumm Street San Francisco, California

Reeves & Skinner Machinery Co. 2211 Olive Street, St. Louis, Missouri

PRIORITIES

Answers to a few of the most pertinent questions asked about procurement of petroleum equipment

QUESTION: Can I maintain my supplies of containers and packaging materials by endorsing an A-10 preference rating to orders under the terms of Preference Rating Order P-22?

ANSWER: No, the Containers Branch of the OPM has ruled that no packaging material is included under this order, and that no preference rating under it can be applied for the obtaining or placing of purchasing orders for any packaging material. "Packaging material" is defined as including bags of all types, barrels, bottles, boxes, cans, containers, cooperage, cores, crates, cartons, cases, tubes, labels, wrappers, wrapping papers, liners, envelops, cushioning or protective packing material, or their component parts made of paper, wood, fabric, glass, plastic, metal, or any other material. This applies to returnable packaging material, as well as that used only one time.

QUESTION: Can I get quicker action on priority requests by submitting them direct to OPM instead of through the Office of Petroleum Coordinator?

ANSWER: No, this causes delay. There may have been isolated instances where OPM has acted directly on an application for priorities for oil industry equipment, but the rule is that all such applications must be sent to OPC for initial examination and recommendation before OPM will give them case numbers and start them through the routine. Frequently it takes many days or even weeks for a missent application to get from OPM to OPC, but OPC normally acts on a request within 24 hours of receipt. Speediest action is obtained when a priority application is addressed directly to the appropriate division of the OPC, that is, Production, Refining, Transportation, or Marketing Division.

QUESTION: Has the OPM declared a limit on the term "minor improvements" as we understand is now accorded a priority number of A-10 in Amendment No. 2 to Preference Rating Order P-46?

ANSWER: Amendment No. 2 puts an end to the uncertainty by providing that a minor improvement or minor capital addition is an expenditure for material not exceeding $1,500 in the case of underground connections, or $500 for other capital additions. A job may not be split up in order to come within those limits.

QUESION: At what points in the Southwest does the Office of Production Management maintain field offices for advice and assistance in obtaining priorities?—W. R. B.

ANSWER: The six offices now functioning in this capacity are in Dallas and San Antonio, Tex.; New Orleans, La.; Tulsa and Oklahoma City, Okla., and at Little Rock, Ark. The field representatives and addresses of the offices are:

J. B. Crockett, manager, Federal Reserve Bank, Dallas, Tex.

George L. Noble, Jr., manager, South Texas National Bank Building, San Antonio, Tex.

John A. Bechtold, manager, Federal Reserve Bank, New Orleans, La.

This is another of the special-service series of questions and answers on priorities for the petroleum industry which has been appearing each week since the September 11 issue.

The Oil and Gas Journal has made arrangements to secure authoritative answers to questions arising among operators in all branches of the petroleum and natural-gas industries and manufacturers and suppliers of materials and equipment on preference ratings. Questions are invited and should be addressed to The Oil and Gas Journal, Priorities Question Department, P.O. Box 1260, Tulsa.

C. F. Aurand, manager, 414 Key Building, Oklahoma City, Okla.

Alfred E. Ballin, manager, Kennedy Building, Tulsa.

C. S. Christian, manager, Federal Reserve Bank, Little Rock, Ark.

QUESTION: In what form should applications be submitted for Project Rating, assuming that a refiner or related operator contemplated construction of one or more units qualifying as essential to the national-defense program?

ANSWER: Application should be submitted in letter form in triplicate and dispatched to the Project Rating Section, Division of Priorities, 462 Indiana Avenue, Washington, D. C. Each paragraph should be numbered in accordance with the following outline and signed by an officer of the applicant company.

1. Name of owner and location of principal office.
2. Location of proposed project or plant extension.
3. Purpose of project.
4. Why is this project necessary to national defense? Explain fully so that justification may be shown for assigning a preference rating to material which may be required on other and vital defense work.
5. Describe project in detail. State (*a*) number and types of buildings, (*b*) type of construction and (*c*) list of material as per attached schedule.
6. Has project been started, (*a*) if so, when and (*b*) what per cent completed?
7. How is project being financed?
8. Have you applied for Certificate of Necessity? (*a*) If so, what action was taken? (*b*) Give certificate number, if any.
9. Estimated date of completion.
10. Estimated total cost exclusive of site.

If the proposed project is an extension of manufacturing facilities, the following points must be included:

11. State number of men employed at present.
12. Present annual output in dollars or units in single shift.
13. State how many shifts working.
14. State how many men will be employed by increasing facilities.
15. If application is for plant expansion to produce material of war, has site been approved by the Plant Sites Board?

CATALOGS WANTED

The Office of Production Management has asked The Oil and Gas Journal to provide copies of individual catalogs issued by oil equipment manufacturers showing complete drawings of all parts and assembly to facilitate work in granting priority ratings.

The literature should be sent to J. T. Sanders, head, Petroleum and Mining Machinery and Equipment, Industrial and Office Machinery Branch, Office of Production Management, third floor, Wing 7, Temporary Building E, Washington, D. C.

QUESTION We are having trouble with our orders for welding material. About 90 per cent of our work is in the oil fields. Can you advise us the best way to order welding rods, etc., so there will not be so much delay in shipments?

ANSWER: If the materials needed are for repair and maintenance your supplier may be in position to make deliveries more promptly by application of the A-10 priority rating to your orders as specified in Preference Rating Order P-22.

QUESTION: Can you advise where to get the forms to make application for a preference rating on materials needed in our functions as a drilling contractor and producer?

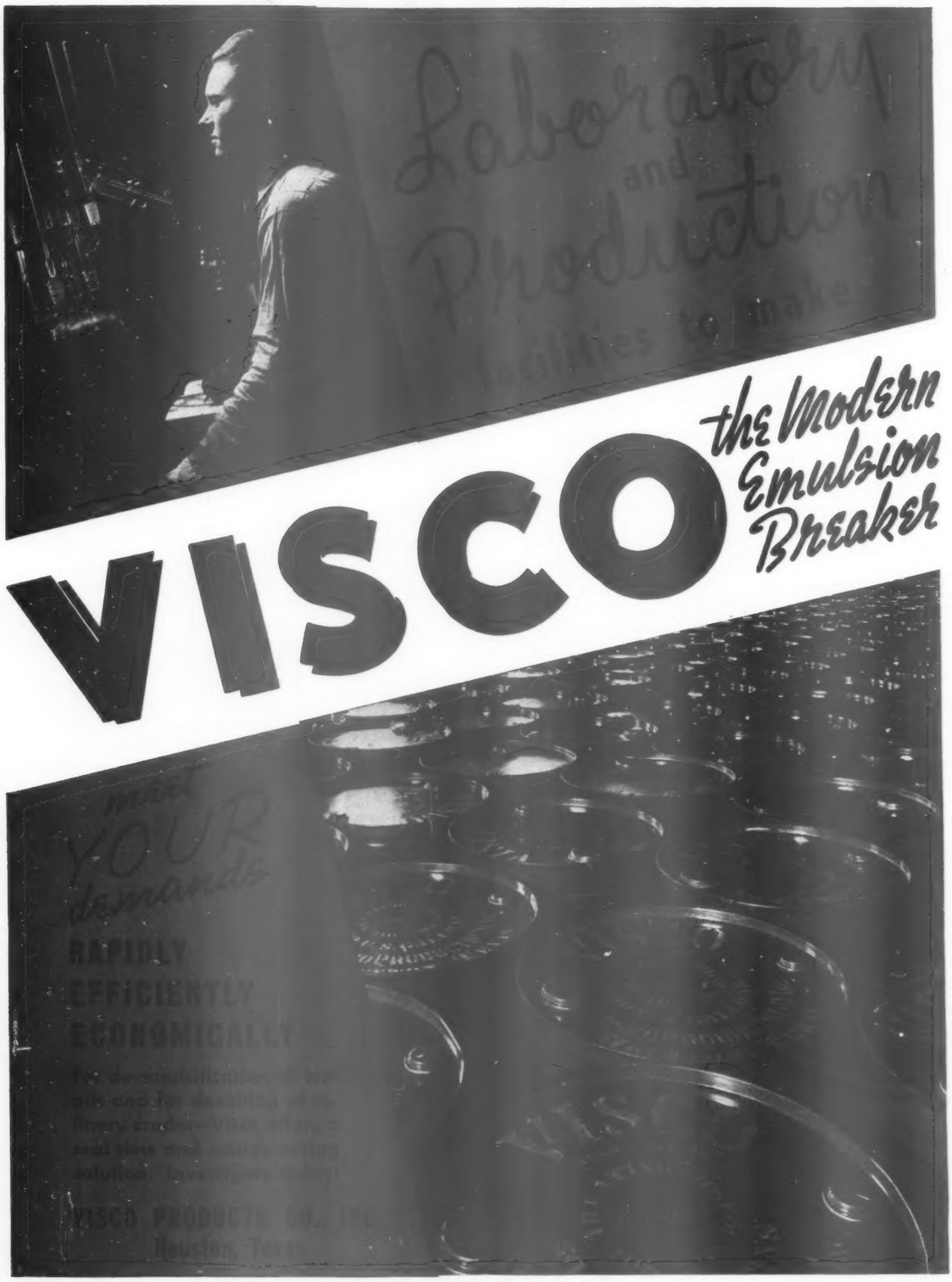
ANSWER: The field offices of the Office of Production Management are distributing forms PD-1 and copies of Preference Rating Order P-22 which are the two needed for making the applications in your phase of operations. One OPM field office is in the Kennedy Building, Tulsa, under the supervision of A. E. Ballin.

QUESTION: Are General Preference Order M-21 and its supplement M-21-a, dealing with priority distribution of steel, to be permitted to expire on the dates previously specified?

ANSWER: Both orders mentioned have been extended, advancing their dates of expiration to December 31, 1942.

QUESTION: Are distributors of liquefied petroleum gas covered specifically in any of the preference rating orders issued for the oil industry or the public utilities?

ANSWER: They are covered in Preference according to a ruling issued last week.



NOTICE: Visco Products Company is authorized to manufacture and sell Visco Oil Treating Compounds for use in the breaking and resolving of oil emulsions under the following United States patents: 1,860,562; 1,860,563; 1,912,330; 1,937,259; 2,050,639; 2,050,640; 2,214,783; 2,214,784; 2,206,589; 2,225,189. Re. 20,717 & patents pending. Any purchaser of Visco oil treating compounds is authorized to use the same in the treating, breaking and resolving of oil emulsions in accordance with the above patents. Visco Products Company is authorized to and is willing to grant licenses to oil companies under any and all of the above patents on royalty bases, permitting the producer to purchase the oil treating compounds at will from any vendor, and to prepare the compounds for use under the above patent or patents. Application for license should be made to **Visco Products Co.**, Houston, Texas.

Refinery Expansion

Five More Aviation Gasoline Projects Given Priority

Five more plants for the manufacture of 100-octane gasoline or some of its components were assured last week. This brought the total of such plants already under construction or soon to be started to 25. All have been granted top priority ratings.

The five newest projects to be given priority were Cities Service Co., East Chicago, Ind., 100-octane gasoline; Warren Petroleum Corp., Tulsa, isobutane, Standard Oil Co. of Louisiana, New Orleans, catalytic-cracking plant; Gulf Oil Corp., Port Arthur, Tex., 100-octane gasoline, and Sinclair Refining Co., Houston, Tex., 100-octane gasoline.

Petroleum Coordinator Harold L. Ickes, who announced the new plants in Washington, said it would take from 10 to 14 months to finish them.

The new Warren Petroleum Corp. plant will be located in the New Harmony pool of White County, Illinois, and will make 160,000 gal. of isobutane and other products a day. It will be part of a repressuring project planned by Superior Oil Co., Tide Water Associated Oil Co., Sun Oil Co. and Continental Oil Co. The company is already building a similar plant in the Cumberland pool of Bryan and Marshall counties, Oklahoma, which is expected to be in operation by January 1.

Facilities of the Gulf Refining Co. plant at Port Arthur are to be increased by the addition of cracking and refining units costing an estimated $200,000 to permit the manufacture of 100-octane gasoline.

Special Lube Refineries Given High Rating

Top priority ratings for plants to manufacture special lubricating oil for aviation and other uses were announced last week in Washington by Petroleum Coordinator Harold L. Ickes. They were granted to the Shell Oil Co., Inc., Houston, Tex., pilot plant, and Sinclair Refining Co., Houston, Tex., aviation lubes.

High priority rating also was obtained for material for a plant for the Panhandle Power & Light Co., Borger, Tex., for a boiler plant to supply power to a new 100-octane gasoline unit.

Furnace Added by Albany Company in Wyoming Plant

ALBANY, Wyo.—Completion of an additional furnace at the Albany Oil & Refining Co. plant here has raised capacity of the topping unit to 650 bbl. daily for handling royalty oil accruing to the state from publicly owned lands in the Lance Creek, Medicine Bow and Rock River fields. Wyoming royalty oil from the three fields is trucked to Albany.

The refining company began operations about a year ago when it was the successful bidder at the royalty oil sale. The company markets the product through its own retail outlets and operates its own transport business. Additional crude is purchased from the Quealy field. Medicine Bow field crude averages 64° gravity; Lance Creek, 47°, and Rock River, 36°. The three grades are blended in the proportion of 2, 4 and 8, respectively.

N. S. Swenson is president of the Albany Oil & Refining Co. and H. J. Metzger is manager.

Kendall Refining Co. Remodels Foster Brook Plant at Bradford

Tankage at the Kendall Refining Co. Foster Brook plant, Bradford, Pa., is being rearranged and an additional railroad siding is being installed in a remodeling program scheduled to be completed January 1. The company recently purchased the Foster Brook refinery from the Bradford Oil Refining Co. The shift in storage and loading facilities was undertaken to relieve traffic congestion and to lessen the fire hazard at the main Kendall refinery in another part of Bradford.

Natural Gas

California Domestic Gas Users Retain Prior Claim to Supply

SAN FRANCISCO, Calif.—The California Railroad Commission last week cracked down on expanding defense industrial natural-gas users who have failed to heed the warnings of both the commission and the natural-gas industry that a shortage was imminent during winter months. The commission announced it would hold fast to rules giving prior claim on available natural gas to domestic customers. It also made some new rules intended to force industrial gas users to provide standby fuel equipment.

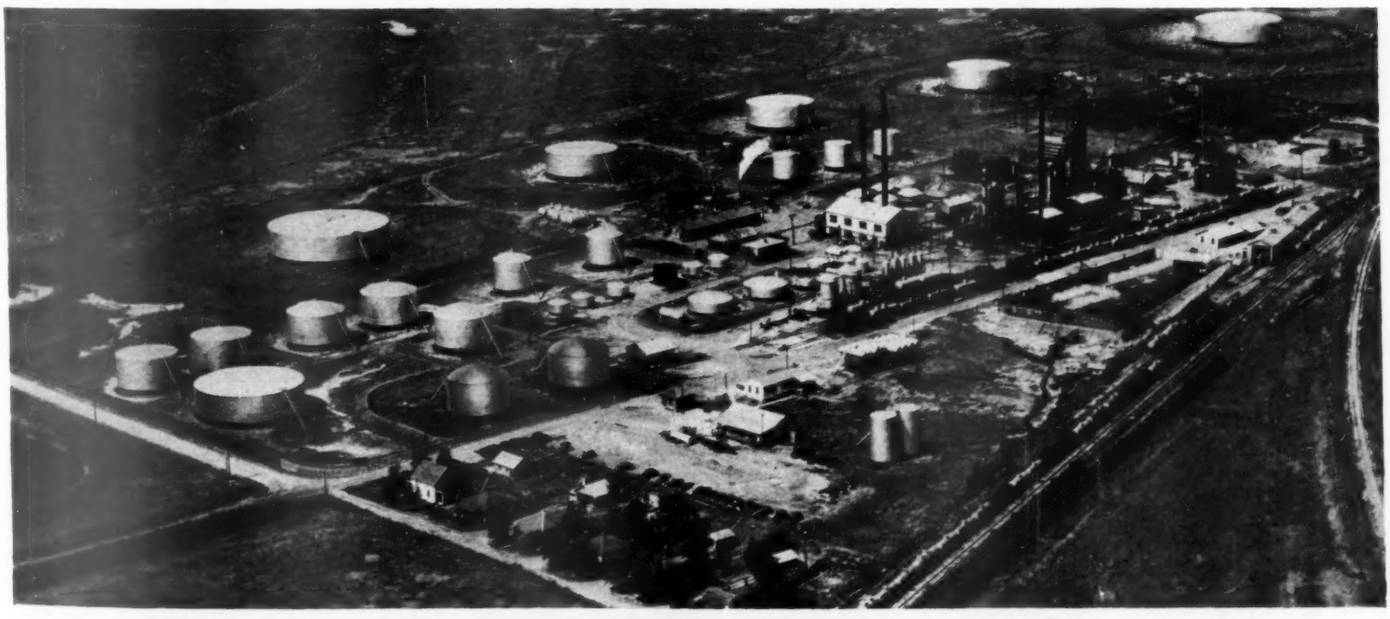
While the commission's order was interpreted in some quarters as placing "butter before guns," the utility regulators made it clear there was enough gas to serve such primary defense plants as lacked adequate other fuel.

Natural Gasoline

Phillips to Build New Plant At Vacuum Field, New Mexico

Phillips Petroleum Co., Bartlesville, Okla., was granted permission by the New Mexico Conservation Commission to build and operate a gasoline plant in the Vacuum field, Lea County, New Mexico. The company stated in plans to construct the plant that 25,000 gal. of gasoline daily would be recovered from gas. Officials estimated it would take about 7,000,000 cu. ft. of gas daily to produce that amount.

INLAND REFINERIES ARE VAST POTENTIAL SOURCE OF AVIATION-FUEL INGREDIENTS



Typical of the inland refineries which are figuring more prominently in defense as potential sources for aviation fuel ingredients is this plant. It is the El Dorado Refining Co. plant at El Dorado, Kans., which recently celebrated its twenty-fifth year in business

PROGRAMS AND MEETINGS

Interstate Oil Compact Commission To Meet December 19-20

The next quarterly meeting of the Interstate Oil Compact Commission has been called to meet in the Biltmore Hotel, Oklahoma City, Okla., December 19 and 20. Telegrams to members giving notice of the time and place of the meeting were sent Tuesday by the secretary. Indications are that member states will all be officially represented.

Since this will be the annual organization meeting, devoted entirely to business, there will be no formal program or open sessions. Invitations will be sent only to the commission, its advisers and counselors, members of its committees, and state regulatory officials.

The meeting will be devoted to the election of officers, appointment of standing committees, and to outlining and planning the activities of the commission for the coming year.

Members of the legal, engineering, and regulatory practices committees are expected to attend the meeting. Their work will be reviewed and coordinated and plans made for their future activities. The technical committee, composed of representatives from the regulatory bodies of the member states, will be organized and their work agreed upon.

The commission, at this meeting, proposes to work out the details of its plan to enlarge its activities and functions to better effectuate its program of conservation.

May Postpone International Petroleum Exposition

Due to the defense program and the scarcity of materials, there has been considerable discussion as to the advisability of holding an oil show in May 1942, as authorized by the board of directors of the International Petroleum Exposition, Tulsa, in May of this year. A meeting was held recently during the A.P.I. in San Francisco, of the Petroleum Equipment and Suppliers Association, and this matter was discussed. A committee was appointed to call on W. G. Skelly and W. B. Way, president and general manager, respectively, of the exposition, and to express the opinion that it would be best for all concerned to defer the exposition until such time as sufficient equipment could be gotten together to insure a show at least equal to the high standard that has been set in the past.

Representatives of the industry and exhibitors will meet at Tulsa, December 8, to discuss, first, the advisability of holding an oil show in May of 1942; second, when an oil show could be held, if not in May 1942; third, the maintenance of the plant and skeleton organization until such time as an oil show can be held, and fourth, the perpetuation of the oil show as an industry asset.

Additional Speakers Announced for Mid-Continent Association Program

The addition of Charles R. Bell, Aladdin Petroleum Co., Wichita, Kans., and F. J. Blaise, Pure Oil Co., Chicago, Ill., to the list of the speakers who will take part in the symposium on the federal excess profits tax during the annual joint meeting of the standing tax committees of the Mid-Continent Oil and Gas Association, which will be held at the Blackstone Hotel, Fort Worth, Tex., on December 4, 5, and 6, 1941, has been announced by Hilary D. Mahin, Phillips Petroleum Co., Bartlesville, Okla., general vice chairman of the association's standing committee on federal income and excise taxation.

In addition to these speakers, F. N. Highams, Humble Oil & Refining Co., Houston, Tex., will discuss "Abnormalities"; Roger S. Randolph, of Campbell, Randolph & Mosteller, Tulsa, will discuss "Base Period Net Income"; E. C. Seymour, Magnolia Petroleum Co., Dallas, Tex., will discuss "Equity Invested Capital"; and E. J. Montgomery, Stanolind Oil & Gas Co., Tulsa, will discuss "Consolidated Returns."

Mr. Mahin also announced that on Saturday morning, December 6, a symposium on the proposed internal revenue administrative code will be held. Included in the panel to discuss this subject are L. Karlton Mosteller, Campbell, Randolph & Mosteller, Oklahoma City, Okla.; Ford L. Billups, T. Dwight Williams & Co., Oklahoma City; and Tom F. Carey, certified public accountant, Oklahoma City. Their discussions will deal particularly with the changes in administrative procedure that would be brought about by the proposed internal revenue administrative code.

Thompson Will Address A.P.I. At Kilgore Meeting

The final 1941 meeting of the East Texas chapter of the American Petroleum Institute will be held in the Kilgore High School Auditorium, Kilgore, Tex., beginning at 8 p.m. on the night of Tuesday, December 9. Ernest O. Thompson, chairman of the Texas Railroad Commission, will address the gathering on "The Present Outlook for the Oil Industry." It is understood that Commissioner Thompson will discuss current trends in the oil industry, including recent developments in Washington. In view of the swift pace of world-wide events and the often asked question of the part the oil industry and the East Texas field will be asked to play in the defense effort, Mr. Thompson's views on this vital subject should be particularly interesting.

For entertainment, a Pan American Airways sound color film, entitled "Hawaii," will be shown. The Territory of Hawaii is in the world spotlight now as the United States armed forces there have been placed on an emergency basis. The regular dinner in honor of the guests and speakers will be held in the Kilgore Hotel Blue Room prior to the meeting beginning at 6:15 p.m.

Accountants Postpone Meeting

The next meeting of the Petroleum Accountants Society of Oklahoma, which previously was scheduled for December 4, has been changed to Wednesday, December 17, and will be held at the Mayo Hotel, Tulsa. This change is necessary as Congressman Disney felt that he should be in Washington when the labor legislation is presented. Congressman Disney will address the members of the society on "Current Ideas on Price Control and Taxation as Related to National Defense," and Ross T. Warner will speak on "Hightlights of the Revenue Act of 1941."

●

Magnetic Storm

TUCSON, Ariz., Nov. 29.—A moderate magnetic storm began November 27 at 6 p.m., and ended November 28 at 4 p.m., central standard time.

CALENDAR

December

EXPOSITION OF CHEMICAL INDUSTRIES, eighth annual meeting, Grand Central Palace, New York, December 1-6.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS, Southeastern district meeting, New Orleans, La., December 3-5.

PETROLEUM ELECTRIC POWER ASSOCIATION, Dallas, Tex., December 4-5.

MID-CONTINENT OIL AND GAS ASSOCIATION, Standing Tax Committees, seventh annual meeting, Blackstone Hotel, Fort Worth, Tex., December 4-6.

OKLAHOMA STRIPPER WELL ASSOCIATION, Tulsa, December 5.

SOUTH DAKOTA INDEPENDENT OIL MEN'S ASSOCIATION, twenty-third annual convention, Aberdeen Civic Auditorium, Aberdeen, S. D., December 11.

INTERSTATE OIL COMPACT COMMISSION, Biltmore Hotel, Oklahoma City, Okla., December 19-20.

1942

January

SOCIETY OF AUTOMOTIVE ENGINEERS, annual meeting and engineering display, Book Cadillac Hotel, Detroit, Mich., January 12-16.

February

AMERICAN PETROLEUM INSTITUTE, Division of Production, southwestern district, spring meeting, Adolphus Hotel, Dallas, Tex., February 26-27.

NORTH TEXAS OIL AND GAS ASSOCIATION, Wichita Falls, Tex., February 28.

March

AMERICAN SOCIETY FOR TESTING MATERIALS, committee week and spring meeting, Cleveland, Ohio, March 2-5.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, spring convention and refiners and suppliers exhibit, Hotel Severin, Indianapolis, Ind., March 3-5.

WISCONSIN PETROLEUM ASSOCIATION, annual convention and equipment show, Schroeder Hotel, Milwaukee, Wis., March 18-20.

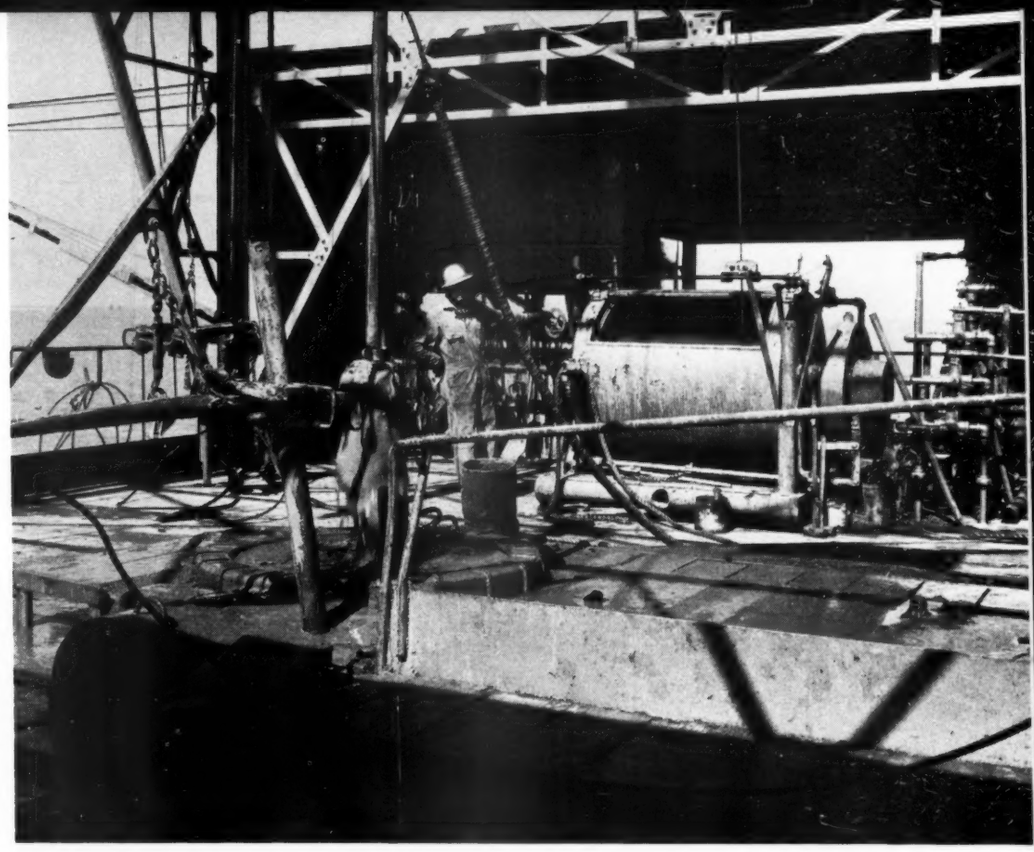
WESTERN PETROLEUM REFINERS ASSOCIATION, thirtieth annual meeting, New Orleans, La., St. Charles Hotel, March 23-25.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, spring meeting, Houston, Tex., March 23-25.

April

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Cincinnati, Ohio, April 15-17.

SOUTHWESTERN GAS-MEASUREMENT SHORT COURSE, Norman, Okla., April 21-23.



Part of the equipment used for running wire-line core barrels is shown in this picture of an offshore Gulf Coast drilling well. The sand reel at the upper right is driven by a twin-cylinder steam engine which is mounted on the drum skid, the two forming a separate unit. Mud is removed from the line by using a small lubricator into which a stream of water is conducted by the rubber hose equipped with a gooseneck made from ¾-in. pipe

ENGINEERING & OPERATION

In This Section

DECEMBER 4, 1941

REVERSE CIRCULATION SPEEDS COMPLETIONS AT CROMWELL, OKLAHOMA
By Harry F. Simons ..... Page 34

Use of a reverse circulator has made it possible to complete wells in the Cromwell field in from 3 to 5 days after cement has set around the pay string of casing. In addition, all the loose scale in the hole is removed and the possibility of having to clean out the well at an early date is removed. Increased velocity of the fluid stream emitted through the tubing increases its carrying power so even large pieces of steel can be brought to the surface.

LION REVAMPS RECOVERY SYSTEM TO SUPPLY NEW POLY PLANT
By W. E. Siegenhain ..... Page 37

Casinghead compression and vapor-recovery units are normally operated in conjunction, but the recent installation at the Lion Oil Refining Co. is designed for independent operation if desired. Average daily charge to the vapor-recovery unit is 2,000,000 cu. ft. of gas.

SOUTHERN PIPE LINE UNDERTAKES CATHODIC PROTECTION IN SAXET
By Bell Williams ..... Page 39

The highly effective black clay in Hooper County, lower Gulf Coast of Texas, is very conducive to electrolytic corrosion. The 66 miles of pipe there and the bottoms of 10 new 55,000-bbl. storage tanks belonging to Southern Pipe Line are now equipped with cathodic protection. Emphasis is on the completion of a network of lines in a local area, extensions being laid when needed.

DETERMINING OPERATING POINTS OF CENTRIFUGAL PUMPS ON PIPE LINES
By A. J. Stepanoff ..... Page 42

By splitting the complicated pipe-line pumping problems into a number of simpler cases a solution can be obtained. Special cases sometimes present difficulties although the determination of operating points of centrifugal pumps is simple in its application.

OPERATING IDEAS ..... Page 45

REFINERY GADGETS ..... Page 50

PROGRESS IN METALS—By W. L. Nelson ..... Page 52

Reverse Circulation Speeds Completions at Cromwell

By HARRY F. SIMONS

Reverse circulation of the drilling fluid is obtained by installing a pack-off head capable of rotation on the casing string and then directing the flow of the mud down the annulus and up through the tubing to which the bit is attached. Principal advantages as a completion method are a substantial reduction in time and costs and a cleaner and more satisfactorily operating well.

REVERSE circulation in tests drilled by the rotary method has been used for specific purposes for a long time, but several years ago it was introduced as a means of completing wells. Its use has expanded until now some companies have rigs specially designed for the work and employ the reverse-circulating rotary for all completion work.

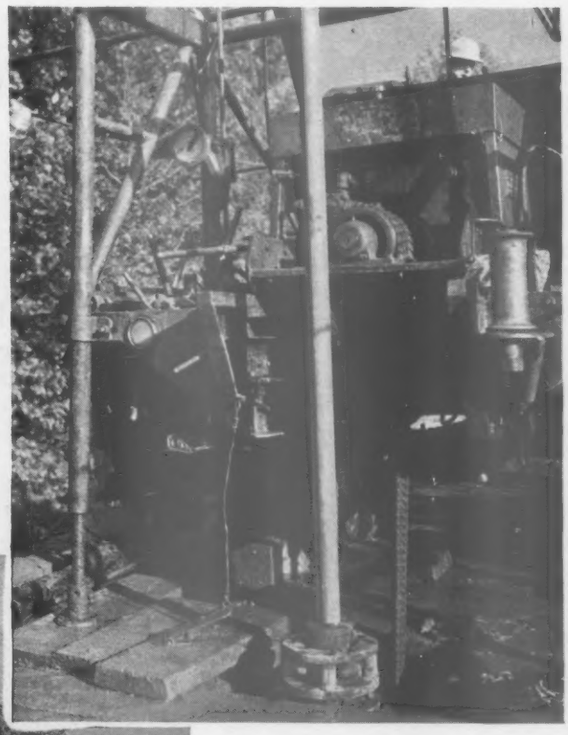
Shell Oil Co., Inc., in its development campaign in the East Cromwell pool of Okfuskee, Okla., uses specially constructed reverse circulators for completing wells drilled to the casing point by portable rotary rigs.

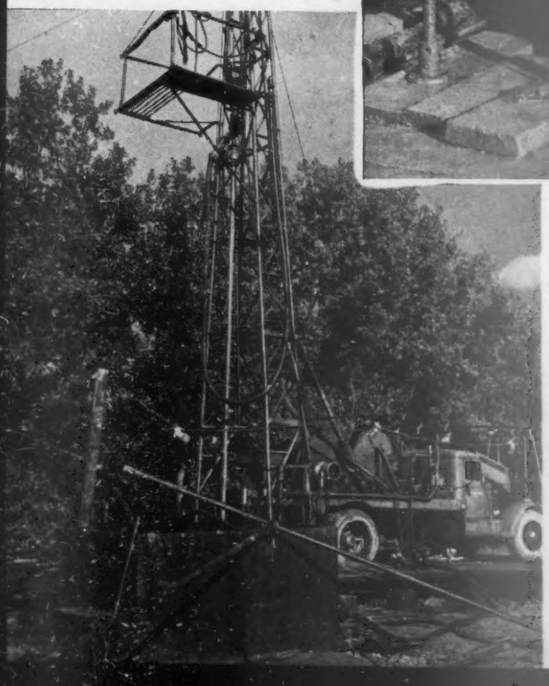
The reverse circulators are truck mounted and are similar to the portable rotaries, except that they are smaller and are equipped with some special items. Actually, any rotary rig can be made into a reverse circulator by providing a means for packing off the annular space and the necessary connections for the reversal of the direction of flow of the drilling fluid. There has also been introduced what is called the "snivie," which is used in washing the face of the pay formation.

Right: Operating end of portable rotary drilling unit used for completing wells in the Cromwell, Oklahoma, field by the reverse-circulation method

Extreme right: Connections needed for reversing direction of flow of the drilling fluid on rotary rig used for reverse circulator. Closing the left and lower left valves results in normal circulation but reversing the valves causes the fluid to go down the annular space and up through the drill string

Below: Over-all view of reverse circulator showing truck-mounted unit with 58-ft. mast and other equipment





Plug With Opposed Valve Cups

The term snivie describes both the tool and the operation. It consists of a short nipple (of the same size as the tubing used for the drill stem) with three perforations and a plug with opposed valve cups. The perforated nipple is run immediately above the rock-bit sub. When it is desired to force all circulation out through the perforations in the nipple, the opposed-cup plug is inserted in the drill string and pumped down to the bit sub, preventing any fluid going through the water course in the bit. The plug is recovered by reversing circulation and pumping it up against the kelly.

Purpose of the reverse-circulation method is to obtain a better completion at less cost. Debris and mud cake on the producing zone can be removed from the hole by circulating oil and a normal well completed in 24 to 36 hours after moving in. Where a well is shot it requires from 3 to 5 days to drill in, shoot, clean out after the shot and give the well a production test. The completion of small holes with cable tools is tedious and often produces complications which add to the time and expense. Use of the reverse circulator results in substantial savings over both slim-hole and regular-hole cable-tool completions.

The theory behind reverse circulation has been discussed elsewhere and will only be reviewed briefly here. Contamination of the sand is avoided if mud and water are eliminated during completion. Use of oil and ordinary circulation have not been successful because of the high fluid velocity required for such a light fluid to remove cuttings from the hole. By reversing circulation and pumping oil down the annular space and up through the drill stem a very high velocity prevails during the trip to the surface.

The increase in velocity of the upward stream is proportional to the area of the annulus and tubing. Where normal circulation gives a velocity of 125 ft. per second in the annulus formed by 2-in. tubing inside 4½-in. casing, reversing circulation will give approximately four times that much

velocity in the tubing. Actual fluid velocity with one 4½ by 6-in. pump operating at 60 s.p.m. is 500 ft. per minute through the tubing. As the carrying power of a stream is a geometric function of its velocity, this increase has a great effect on the size and density of particles which can be brought to the surface. Even large pieces of steel can be removed from the hole. In one case a reverse-circulating crew recovered a set of steel bearings which had been lost in the hole when a cutter element came off a rock bit. Time for cuttings to come to the surface from 4,500 ft. is less than 10 minutes.

Mud Line Manifold Directs Flow

Rigs used by Shell Oil Co., Inc., in that company's operations are mounted on a truck complete with an open-face derrick which is raised by hydraulic power. The truck engine, a diesel type with six cylinders and 110 hp., is used for driving the 4 by 6-in. pump, the drilling-line drum, sand reel and rotating head. The drive is through a power takeoff and a heavy-duty transmission, a main shaft, and chains and sprockets. The rotating head is driven from the main shaft through six adjustable V-belts. All clutches, except one jaw clutch, are of the friction type. Controls are centralized at the driller's position.

The reverse-circulating manifold is mounted on the discharge mud line from the pump and consists of four valves, two for directing the drilling fluid into or out of the annulus and two for controlling direction of flow in the kelly.

The circulating rotating head fastens on the bowl of the stripper-type tubing head and includes a driving attachment and provisions for a positive packoff. The kelly used is about 3 in. in diameter and is hex; the drive bushing stays on the kelly. The operation of the head is simple and requires no manipulation to get the kelly and the drill string from the hole. When high flowing pressures are encountered in a well, a second tubing packoff head is installed between the drilling head and the casing string. This packoff is then left in place when the well is completed and the producing string of tubing run through it.

A square tank with about 30 bbl. capacity is used for holding the circulating medium. The tank has a screen compartment at one end into which the return fluid from the well enters. A 4½-in. hose is used to connect the tank to the pump and a separate bottom connection is provided for cleaning purposes.

Practice at East Cromwell is to run 4½-in. casing and 2-in. external upset grade H-40 tubing with eight round-thread couplings. This tubing is used as a drill string for completing the well, the perforated 17-in. nipple, a sub and 3⅞-in. bit being placed on bottom. The bit has no water courses in it but only a single opening 1⅛-in. in diameter. In all of the jobs performed where tubing was used as a drill string there have been no breakoffs.

In casing the wells a float collar is run above the bottom joint and the cement plug stopped as close to it as possible. The plug is pumped down with mud.

Circulate Mud From Hole

As soon as the cement has set the prescribed time, the drilling head is installed and the tubing and bit run in the hole with stops being made to circulate the mud out with water. When the top of the plug is reached, reverse circulation is maintained until only clear water is coming back. The plug and cement are then drilled to the top of the shoe and to the bottom of the anchor hole below it. It generally takes 4 or 5 hours to drill the cement and wash it from the hole.

The anchor hole is then washed with the snivie, the plug being dropped in the tubing string and pumped to below the perforated nipple. The tubing is raised and rotated slowly while normal circulation is maintained so the wall of the hole is thoroughly washed. The perforations in the nipple are approximately ⅜-in. diameter each and with from 500 to 700 lb. pressure on the pump the impingement on the walls is more than enough to dislodge any mud.

The snivie is recovered by using reverse circulation and pumping it up against the kelly and then breaking the kelly off and lifting it out. Oil is then used for drilling the formation with reverse circulation.

Time to drill pay formation varies with its hardness and thickness. Two pays, the Cromwell sand and the Hunton lime, are being developed in the pool by drilling twin wells. The Cromwell sand generally drills about 1 ft. in 4 minutes although in some cases it may taken 45 minutes to the foot. The Hunton requires about 20 min. per foot. The bit is turned at about 60 r.p.m. and 3,000 to 8,000-lb. weight is used. Pump pressure runs up to 300 lb. per sq. in. Samples are caught each foot.

About 30 ft. of pay formation is drilled and then washed thoroughly with oil by dropping the snivie in the tubing and establishing normal circulation through the perforated nipple. About 45 minutes is needed to raise and lower the tubing five times over a distance of 30 ft. while rotating and circulating normally.

Both casing and tubing swabs have been used to bring the well in with the former being most generally used. The casing swab is run with an 8-ft. sinker bar and a set of short-stroke jars on the sand line. A control head is used in place of the rotating head for the swabbing.

Where sand wells are shot, the cleaning out naturally requires more time, about an additional 3 days. The holes in such cases are alternately snivied and reverse circulated with oil until no further sand is recovered. During normal circulation through perforations from 500 to 700 lb. per sq. in. pressure is used.

Acidizing can be performed after the reverse circulating rig has moved off as all the needed connections are left in place.

The reverse-circulation method has been tried for cleaning out old wells, but where the formation pressure is low it is not yet entirely successful because of the difficulty in maintaining circulation. On new completions, very little if any oil escapes into the pay zone and it can be recovered. On old wells the loss is substantial and the main objective, removing accumulated debris, is not realized. A number of plugging agents have been employed, the most successful of which is flake mica. There is some question though about reopening of sand pores after they have been deliverately plugged. Reverse circulators are consistently used only on new wells or old ones which still have an appreciable bottom-hole pressure.

Above: Packoff-type drilling head is driven through V-belts and sheaves from transmission shaft on unit. Satisfactory operation of the head had been obtained without outboard bearings. Rotation is at 60 r.p.m.

Above: Drilling fluid comes from the well through the kelly, and standpipe and flow lines into a small compartment at end of tank. Most of the particles coming from the well are large and are stopped in the separating compartment and are not recirculated

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Lion Revamps Recovery System

. . . to better supply polymerization unit

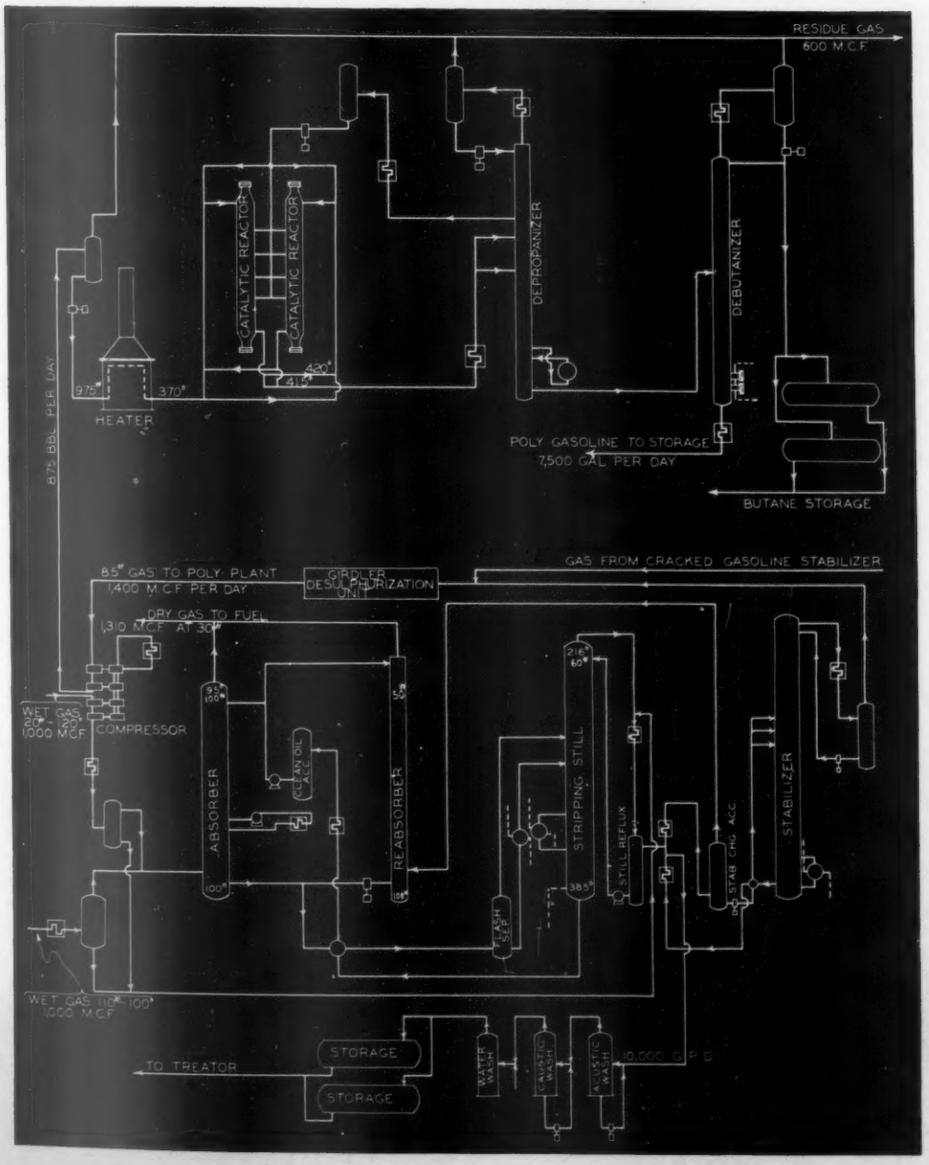
By W. T. ZIEGENHAIN

REPRESENTING an important part of its 1941 plant construction program, the Lion Oil Refining Co. has placed in operation a vapor-recovery as well as a catalytic-polymerization unit. Normally these units operate in conjunction with one another; however, the processing is so arranged here that the two can be operated independently. Reference to the accompanying flow chart is suggested.

The vapor-recovery unit was designed essentially to process refinery gases originating from the cracking and topping operations and thereby produce a light motor-fuel blending material and poly-plant feed stock.

The average daily charge to the unit is approxi-

General view of Lion Oil Refining Co.'s new vapor-recovery, vapor-treating and catalytic-polymerization equipment at the El Dorado, Ark., refinery. Approximately 2,000,000 cu. ft. of fresh, mixed gases come to the new equipment daily

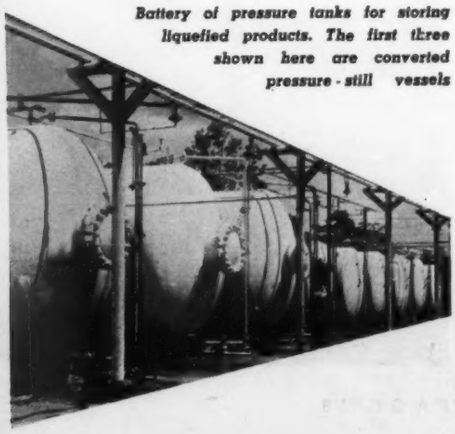


Simplified flow diagram of Lion Oil Refining Co. new vapor-recovery plant and catalytic-polymerization unit at El Dorado, Ark., refinery

mately 2,000,000 cu. ft., of which 85 per cent is cracking still gas. The three streams of gas charged to the unit are received at pressures of 0, 20, and 110 lb. per sq. in. The high-pressure gas enters the absorber under its own pressure while the balance is compressed to the absorber inlet pressure of 105 lb. per sq. in. by passing it through two cylinders of the 300-hp. four-cycle vertical gas engine-driven compressor. The engine also powers two additional cylinders to compress poly feed stock. The gases, after passing through cooling coils installed in a 3,000-g.p.m. natural-draft cooling tower and drip accumulators, enter the absorber, which is equipped with an absorption oil intercooler, where they are scrubbed with a 40-gravity 600-end-point absorption oil; the dry gas passing to the fuel system.

Rich oil from the absorber, after passing through two lean-to-rich oil exchangers, enters a flash drum where, due to a reduction of pressure, a portion of the light fractions flash overhead to the stripping still. The temperature of the

(Continued on Page 51)



Battery of pressure tanks for storing liquefied products. The first three shown here are converted pressure-still vessels

Southern Pipe Line Undertakes Cathodic Protection in Saxet

By NEIL WILLIAMS

ELECTROLYSIS has been a major problem in the maintenance of pipe lines in the Saxet field, Nueces County, lower Texas Gulf Coast. Soil in this field, a heavy black clay, highly alkaline, and, being somewhat soggy and poorly drained, has been unusually conducive to this form of corrosion. Under these circumstances, deterioration of metal has been so rapid that life of pipe has been materially shortened. Frequent replacement or reconditioning of sections of line has been occasioned.

Coating of lines has afforded considerable protection against electrolysis. However, conditions in the field generally have been destructive of coatings, most of which are old. Where holidays and other imperfections develop, the pipe is subjected to electrolytic action. In most cases it has been difficult to insure the maintenance of perfect coating jobs at all times. Also, there are numerous small gathering lines that owners have not seen fit to attempt to coat.

These conditions lately have led Southern Pipe Line Corp. to undertake the application of cathodic protection to its lines in the field. This company, an affiliate of Southern Minerals Corp., a major producer and purchaser of oil and gas at Saxet, has upwards of 60 miles of lines in the field, all of which are covered in the protection program. In addition, protection is being provided for the bottoms of 10 new 93,000-bbl. storage tanks at the company's terminal near the field.

Lines involved represent both gathering and transmission systems. These range in size from 20 in. down to 2 in., and comprise upwards of 35 miles of oil lines, approximately 22 miles of gas lines, and a 6-mile gasoline line from Southern Mineral Corp.'s gasoline plant in the field to the company terminal. Oil lines consist of the company's field gathering system and a 6-in. trunk line to the terminal, and that portion of the company's 6-in. line from the Richard King field that traverses the Saxet field. Later, protection will be applied to the remainder of the latter 24-mile line, and also to an additional 8 miles of 4-in. and 2½-in. line recently laid by Southern Phillips Pipe Line Co. from the new Odem field to Turkey Creek.

Gas lines embrace a number of different systems, namely:

1. A high-pressure gathering system for strictly gas wells supplying gas to the high-pressure phase of natural-gasoline plant operations.

2. High-pressure transmission lines for delivery of high-pressure residue gas from gasoline plant to market outlets.

3. High-pressure distribution system to supply high-pressure residue gas to gas-lift operations in the field.

4. Low-pressure gathering system supplying vent gas from oil wells to the low-pressure phase of natural-gasoline plant operations.

5. Low-pressure transmission line for delivery of low-pressure residue gas from gasoline plant to Columbian Carbon Co.'s carbon-black plant near field.

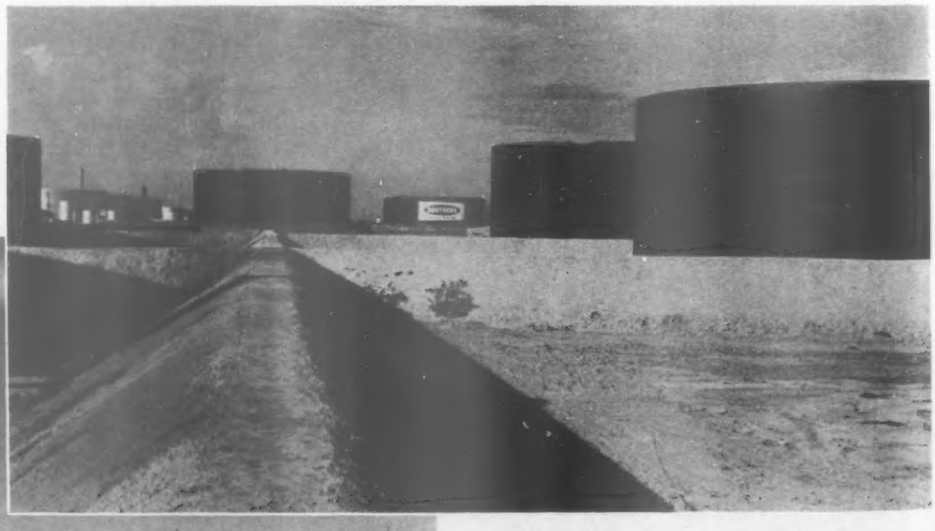
Large Cathodic-Protection Units

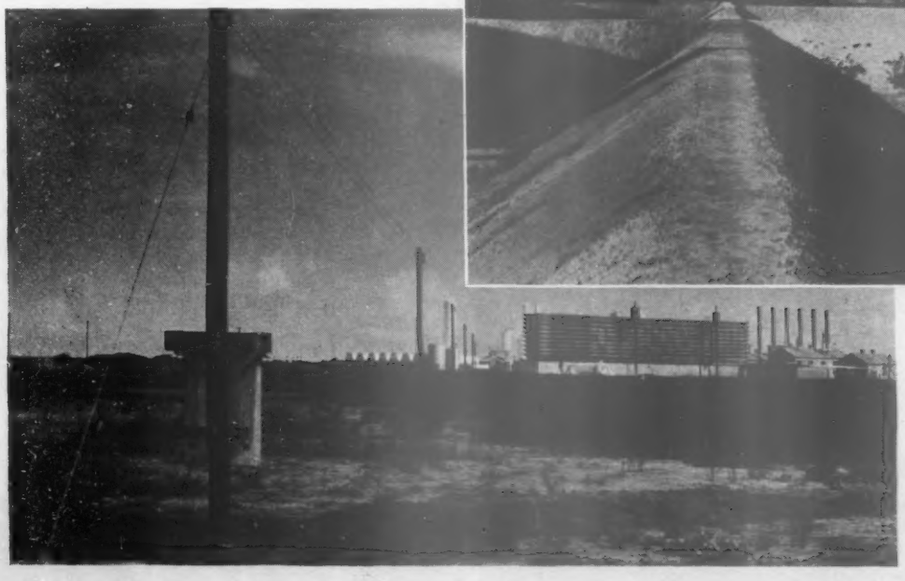
Cathodic protection of these lines has involved a number of special problems and factors. The various different systems and lines are concentrated within an area of less than 8 miles long, and 3 miles wide. This has resulted in a network of closely paralleling and crossing lines, some large and some small, some well coated and some bare To insure adequate available current for protection of so many lines within comparatively small areas, extra large cathodic-protection units have been occasioned.

Installations for protection of the pipe lines consist of three copper-oxide rectifiers, each having an output of 1.8 kw., and 12 gas-engine-driven generator units, each with an output of 6 kw. The 10 tank bottoms at the terminal and the main line into the terminal are protected by two additional copper-oxide rectifiers, each with an output of 1.8 kw., the same as the three on the pipeline systems.

Current for the rectifiers on the pipe-line systems is supplemented by an extra 17-kva., 220-volt generator which was available at Southern Minerals Corp.'s gasoline plant. The units are located at distances of approximately 900 ft. from the plant in three directions at approximately 120° angles. They protect lines immediately around and coming into the plant. At 900 ft. these units are calculated to be sufficiently distant from the plant that very little, if any, excess current imparted to the lines leading into the plant is lost on the plant itself, where there is a large amount of bare metal.

Overhead lines deliver the current from the plant generator to each of the units. Through built-in transformers in each rectifier the alter-





Above: Some of the 10 new 93,000-bbl. storage tanks erected by Southern Pipe Line Co. (Southern Minerals Corp.) at its terminal adjoining the Saxet field at Corpus Christi, Tex. Bottoms of these tanks have been placed under cathodic protection. Some of the older tanks of the terminal are shown in the background.

Left: Power-line installation from generator in Southern Minerals Corp.'s gasoline plant to rectifier unit providing cathodic protection on Southern Pipe Line Co.'s pipe-line system

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"FX" POWER SLUSH PUMPS			
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7¼ x 10	450	365	100
7¼ x 12	495	470	150
7¼ x 14	577	550	200
7¾ x 16	693	575	250
7¾ x 20	774	880	425
All sizes may be furnished with reduced sizes of liners and pistons for higher pressures.			

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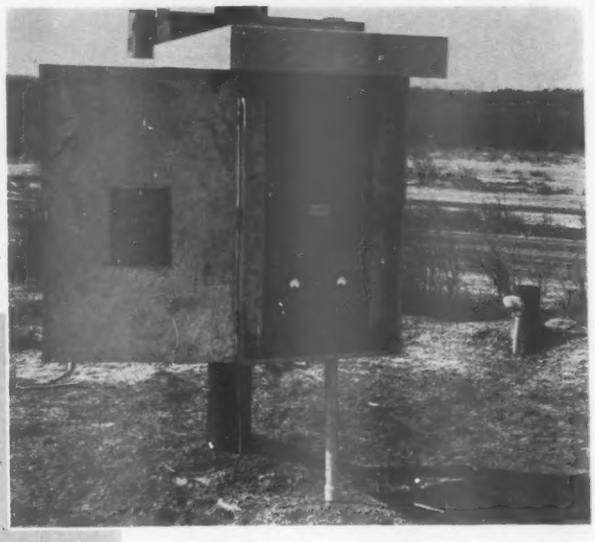
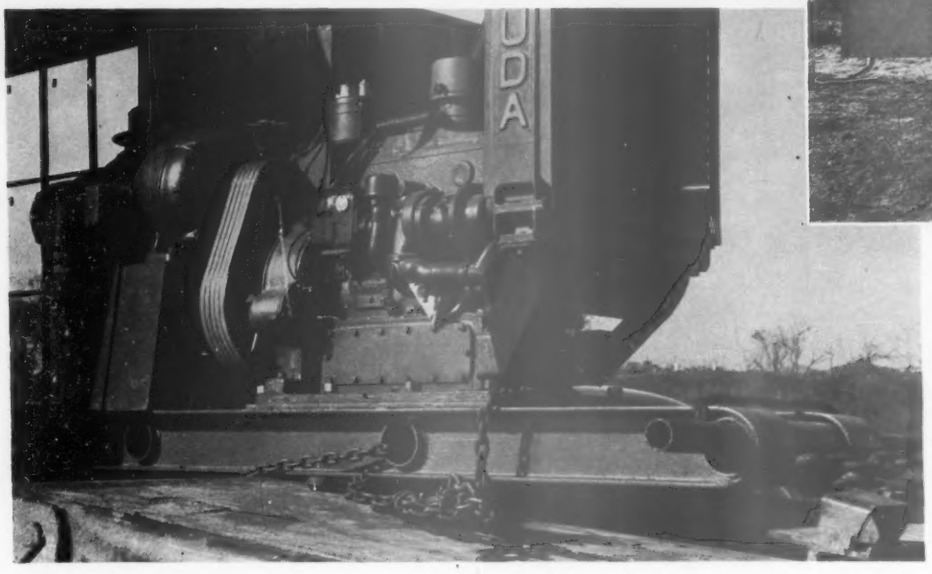
nating current is stepped down to approximately 8 volts. Stacks of specially coated copper-oxide plates then convert from alternating to direct current.

Each of the gas-engine-generator units consist of a 6-kwa., 150-amp., 40-volt, d.c. generator, V belt driven by a 16-hp. (at 800 r.p.m.) gas engine. The generator and engine of each are mounted as a single unit on a steel skid base, which facilitates transportation and installation. At the minimum rated output at the generators, the engines operate on a 50 per cent load with a speed of 800 r.p.m. This should serve to prolong the life of the engine-generator cathodic-protection unit. Each generator is shunt-wound with separate excitation, and especially adapted to the purpose of cathodic protection. In so far as it is possible a constant rate of current output from the unit is maintained for cathodic protection of the pipe lines.

Right: Rectifier installation showing ground-bed connection on Southern Pipe Line Co. pipe-line system in Saxet field. Below: One of 12 gas-engine-generator units installed by Southern Pipe Line Co. for cathodic protection of its pipe-line system in the Saxet field. The unit is being skidded into the small, sectional metal building which will house it while in operation. All 12 units now are in operation.





The units are housed in small, individual, sectional metal buildings, with floors elevated on dirt fills above water overflow level in the field.

With all units the same size, effective utilization of the available current is obtained by spacing the units according to requirements for protection. Locations of the units were determined from various factors, including among other things, the number of lines in an area, sizes of the pipe, amount and type of coating on the lines, and soil-pipe potentials. As the installations are now spaced, the extent of protection coverage per unit ranges from a minimum of about two-thirds of a mile each way from the installation to a maximum of 3 miles.

Ground beds in each instance are set back from 350 to 400 ft. from the lines protected in order to obtain the calculated maximum spread of effective current flow in each direction. Each consists of ten 12-ft. to 15-ft. lengths of 6-in. to 8-in. pipe set vertically in the ground on a line at right angles with the course of the lines being protected. They were designed with sufficient metal to provide for a life of a minimum of 2½ years. The amount was calculated on the basis that for each ampere of current 15 lb. of metal is given off annually. Based on the rated output of 150 amp. (engine-generator sets) theoretically 2,250 lb. of metal will be lost each year from a ground-bed installation.

With a view toward prolonging the life of the ground beds, an experiment is being undertaken in these installations of filling the ground-bed pipe with a carbon residue obtained from a near-by carbon-black plant. It is hoped that when the metal of the pipe is entirely or practically used up, the remaining packed carbon residue will remain as a carbon anode.

Of interest in connection with the gas-engine-generator-unit installation is the use of the fuel-gas line as the negative connection from the pipe line to the generator. This line, which feeds from a high-pressure gas line, is a 1-in. pipe. By thoroughly insulating it from the ground with a hot application of a coal-tar enamel coating it is a satisfactory electrical connection to the pipe.

Tank-Bottom Protection

Current for the two rectifying units protecting the tank bottoms at the terminal is supplied from purchased power obtained from an adjacent high line. The potential protective capacity of these units is calculated to be sufficient not only for the bottoms of the 10 new tanks already erected but also for half again as many tanks. Current requirements have been minimized by special precautions which were taken to protect the bottoms of these tanks. Negative connections to the rectifiers are made on the main lines entering the tanks. For each tank a moat was cut around each foundation with a drag line to insure complete drainage of all water away from the tank bottom. The graded foundation was then covered with a 4-in. fill of clean river-bank sand on which the tank bottom is laid, insulating it from the soil of the original foundation.

The protection program being carried out was designed by Starr Thayer, corrosion engineer of Houston, Tex., working in consulting capacity with company engineers. Current requirements on which the size and spacing of protection units was based were determined during a preliminary survey, for which a standard portable welding machine was used to check potentials. Units involved an investment totaling approximately $25,000.

Plans nw are being laid by the company to provide complete cathodic protection for its jetting gas pipe-line system in the Aransas Pass field, in San Patricio and Aransas counties. In this field, the company is completing the laying of a new gas-gathering system, consisting of approximately 3,400 ft. of 4-in. and about 6,000 ft. of 2-in. line, augmenting oil and gas-gathering lines already in operation. The new system will supply gas to a new compression plant which has been installed to carry on gas-lift operations.

●

Quick-Setting Gypsum Cement Aids in Landing Surface Pipe

IN many areas where oil wells are drilled, considerable difficulty is experienced in making the surface hole and setting the surface pipe due to the loss of circulation of the drilling fluid into gravel beds, porous sandstones and quicksands. The loss of circulation will often result in the sticking of the drill stem; it also will make it impossible to place cement along the complete length of the casing string. This latter point is desirable always and absolutely essential in many cases if the well is to be properly protected.

Generally mud is mixed before starting to drill the surface hole in areas such as the Texas Panhandle where a thief zone is known to exist near the surface. The mud in many cases will seal off the porous zone (which is fresh-water bearing and must be protected) long enough to drill the surface hole to the desired depth. Colloidal material is used almost exclusively for making this surface-hole mud as a fluid with a low density and a good wall-building characteristic is desired.

However, the porous zone in many cases is impossible to seal with the result that the drilling fluid enters the formation, sometimes faster than fluid can be pumped into the hole. It thus becomes necessary to shut off the thief zone.

Generally, a batch of cement run into the hole will effect the seal. However, the setting period required by the cement causes the rig to lose considrable time. One company has found that the trouble can be cured quickly and easily by the use of quick-setting cement.

When it becomes evident that mud is being lost into the porous zone at about 400 ft., the pipe is pulled from the hole and the bit removed, after which the pipe is rerun to bottom. From 5 to 20 sacks of quick-setting cement are then pumped into the hole and allowed to set for 2 hours. The cement in the hole has completely set by that time and can be safely drilled out and operations continued.

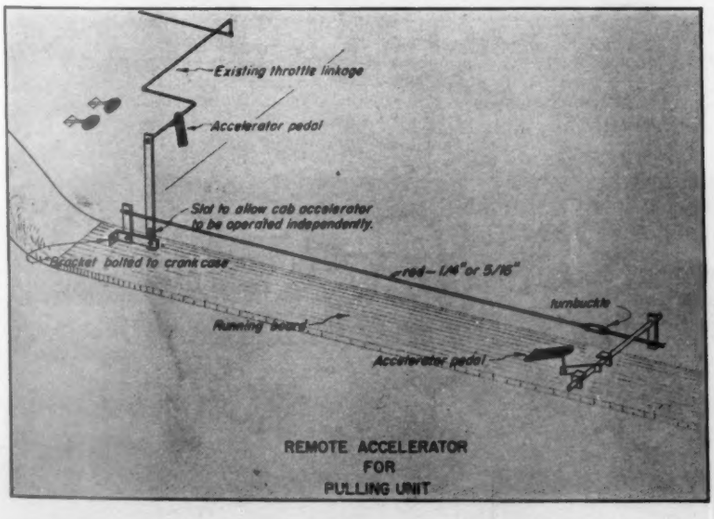
Operating Ideas

Exhaust Muffler for Heavy Engine

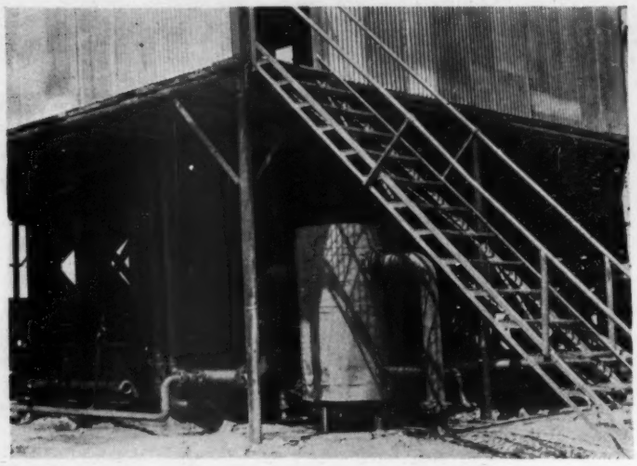
An effective, compact and inexpensive muffler made from standard-size pipe found around a drilling well is shown in the accompanying photograph. The muffler was made by the oil-company welder for use on the heavy engines on a mechanical rotary rig on the Gulf Coast. Three-inch stacks at each end of the exhaust manifold support 8-in. casing used for a damping chamber. The 5½-in. stack with horizontal T member provides ample exhaust space and also prevents rain water from entering the muffler and manifold while the engine is idle.

Remote Control for Pulling Unit

On many light pulling units the speed of the truck engine must be controlled from the position where the hoist brake and clutches are located. Flexible cables, or telegraph cords, are often used for this purpose, but the control is not as effective and in addition the cable breakage often results in the loss of time. An employe of Cities Service Oil Co. designed the system shown in the accompanying illustration. By making only slight changes it is applicable to any truck or car which is equipped with a hoist or wire-line reel.

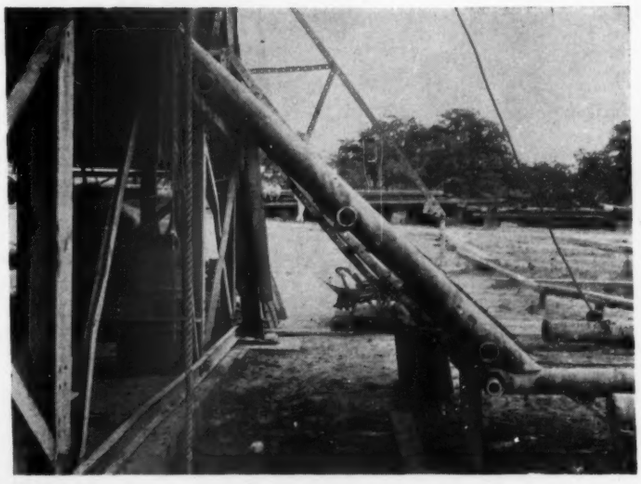


REMOTE ACCELERATOR FOR PULLING UNIT



Insulation on Steam-Line Water Trap

Satisfactory operation of steam engines depends to a great extent on the prevention of the entrance of condensation into the steam chest. Practically all such engines are equipped with a water trap on the steam line ahead of the engine. Where the steam lines are insulated it has been found that uninsulated traps cause heat losses. Many operators are now covering the water traps with insulation protected by a light metal cover. Installation shown is in California. Note that the 12-ft. substructure has required a supplementary engine foundation. Special safety stairway prevents injuries to crew members when entering or leaving the engine shed.



Ramp Frame Made From Drill Pipe

One Mid-Continent drilling contractor has built a walk and pipe rack from old drill pipe which is adjustable and easily installed. The walk serves as a loading platform for odd pieces of equipment while moving. The ramp from the walk to the derrick floor is made from drill pipe floored with heavy timbers. Bolts through ramp and walk frame and through the ramp frame and the derrick hold it firmly in place. As both the ramp and walk are adjustable they can be used with various sizes of substructures with the exception of the very high ones. The entire assembly, drill-pipe rack, casing rack, walk and ramp take only a few hours to assemble. Catline wear is being reduced by using a length of ⅝-in. wire rope with a tail chain on it for picking up drill pipe and other items.

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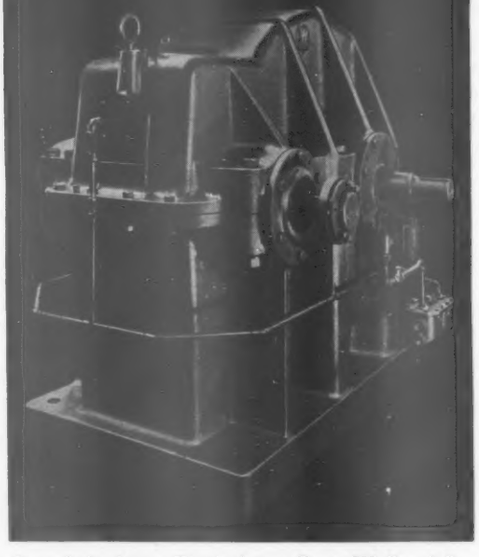

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Determining Operating Points Of Centrifugal Pumps

. . . Working on Pipe Lines

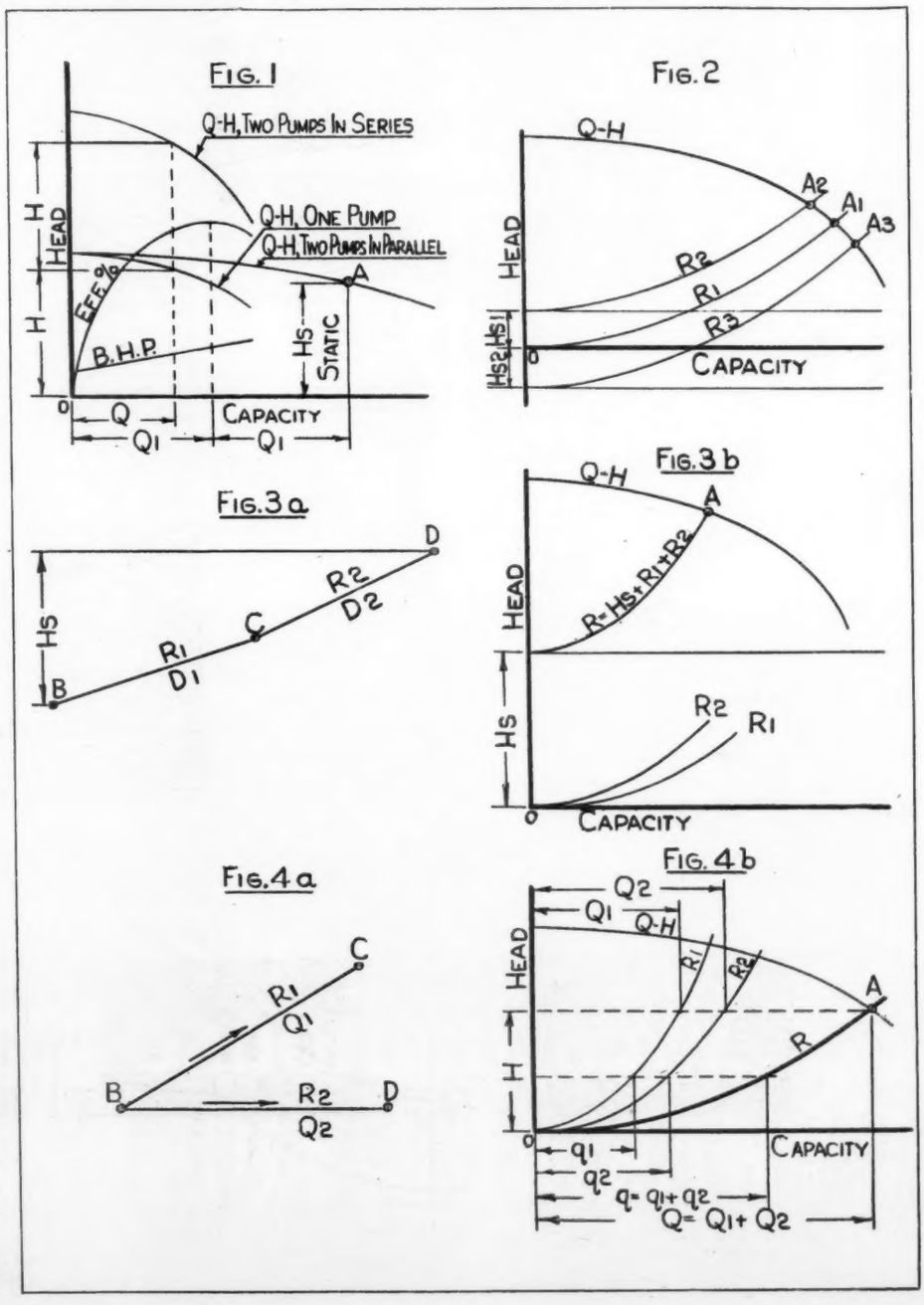
By A. J. STEPANOFF
Ingersoll-Rand Co.

Although the principle involved in problems connected with the determination of operating points of centrifugal pumps on pipe lines is simple in its application, special cases sometimes present difficulties. This paper outlines the method to be followed in solving complicated cases by splitting the problem into a number of simpler ones.

AT constant speed, the capacity of a centrifugal pump varies with the head against which the pump is working, capacity increasing with the decreasing head. The slope of the head-capacity curve, or steepness, depends mostly upon the type of the pump, or pump specific speed. Only a slight variation is possible from a typical head-capacity curve for a given specific speed by the modification of controlling design elements, without sacrificing efficiency. The shape of the efficiency and brake-horsepower curve depends on the slope of the head-capacity curve, and is also fixed to a great extent for a given specific speed. The operating point of a pump, i.e., head capacity, efficiency, and brake horsepower, depends upon the head against which the pump has to work, and with the pump total head known, the capacity, efficiency, and brake horsepower can be read off the pump-performance curve.

However, when a pump has to overcome the pipe-line resistance in addition to the static head, the head against which the pump has to work also varies with the capacity, pipe-line resistance increasing with the capacity. The operating conditions of the pump in that case are best determined graphically by plotting on the same sheet and to the same scale, both pump head-capacity curve and pine-line-resistance curve. The operating point is obtained by the intersection of the two. The procedure is very simple when only one pump and one pipe line of a constant diameter are involved. However, when more than one pump is used to produce the total head or the pipe line consists of several sections of different diameters going through points at different elevations, or when the flow from a main pipe line is divided, the plotting of the pipe-line-resistance curve becomes more complicated. The object of this article is to outline the procedure to be followed in determining the operating point of centrifugal pumps for such cases.

In every case, the operating point is obtained as an intersection of the pump head-capacity curve and the pipe-line characteristic curve. When the total head is produced by more than one pump operating in series, the pump head-capacity curve is obtained by adding the heads for a given capacity. Fig. 1 shows the head-capacity curve for two pumps in series. When the total capacity is split up between the two pumps, the combined head-capacity curve is obtained by doubling the capacities for given heads. Fig. 1 also shows head-capacity curve, marked *Q-H* curve, for two pumps in parallel. The same procedure is followed if the pumps are not alike. When two pumps are



available and are to operate against pipe-line resistance, it is not always possible to say offhand whether the maximum capacity will be obtained when operating pumps in series or parallel. This depends upon the characteristics of the pumps and pipe line. Only by plotting head-capacity curves for series and parallel operation and determining the points of intersection of these with the pipe-line resistance curve is the correct answer obtained.

1. Pipe-line-resistance curve.

It is the plotting of the pipe-line-resistance curve that may present difficulties in some complicated cases. In every case the problem is split up into several simple ones, and the final pipe-line resistance curve is plotted by combining the pipe-line resistance curves of the several elements comprising the given pipe line.

Several cases will be considered, starting from the simple and working up to more complicated cases. When a pump is working against the static head H_s only, the pipe-line-resistance curve is a horizontal line drawn at a distance equal to the static head H_s from the zero head on the head-capacity scales, Fig. 1. When the pump is working into a pipe line laid out on a perfectly flat surface, the pump total head is used to overcome the pipe-line friction. The pipe-line friction increases with the capacity going through the pipe line approximately as the square of the capacity, and the pipe-line characteristic curve is a parabola with the apex going through the zero head point of the head-capacity curve. Fig. 2, Curve R_1 represents the pipe-line-resistance curve for such a case. The operating point A_1 is obtained as intersection of pipe-line-resistance curve and the pump-head-capacity curve. When, in addition to pipe-line resistance, the pump has to overcome static head H_{s1}, the combined pipe-line characteristic curve is obtained by plotting the pipe-line-resistance curve (R_2, Fig. 2), as the sum of the static head and the pipe-line-resistance curve. When the final point of destination is located below the pumping station, then the pump total head required to force the liquid through the pipe line is less by the difference in elevation, as this would assist the flow, and at small capacities the flow will take place by gravity. The pipe-line characteristic curve in that case is obtained by subtraction of the difference in elevation between the pumping station and the end of the pipe line, which results in shifting the pipe-line-resistance curve (R_2, Fig. 2) by the static head H_{s2} below the zero head line. The pump operating point in every case is obtained as an intersection of the pipe-line-resistance curve, and the pump head-capacity curve (points A_1, A_2, A_3, Fig. 2).

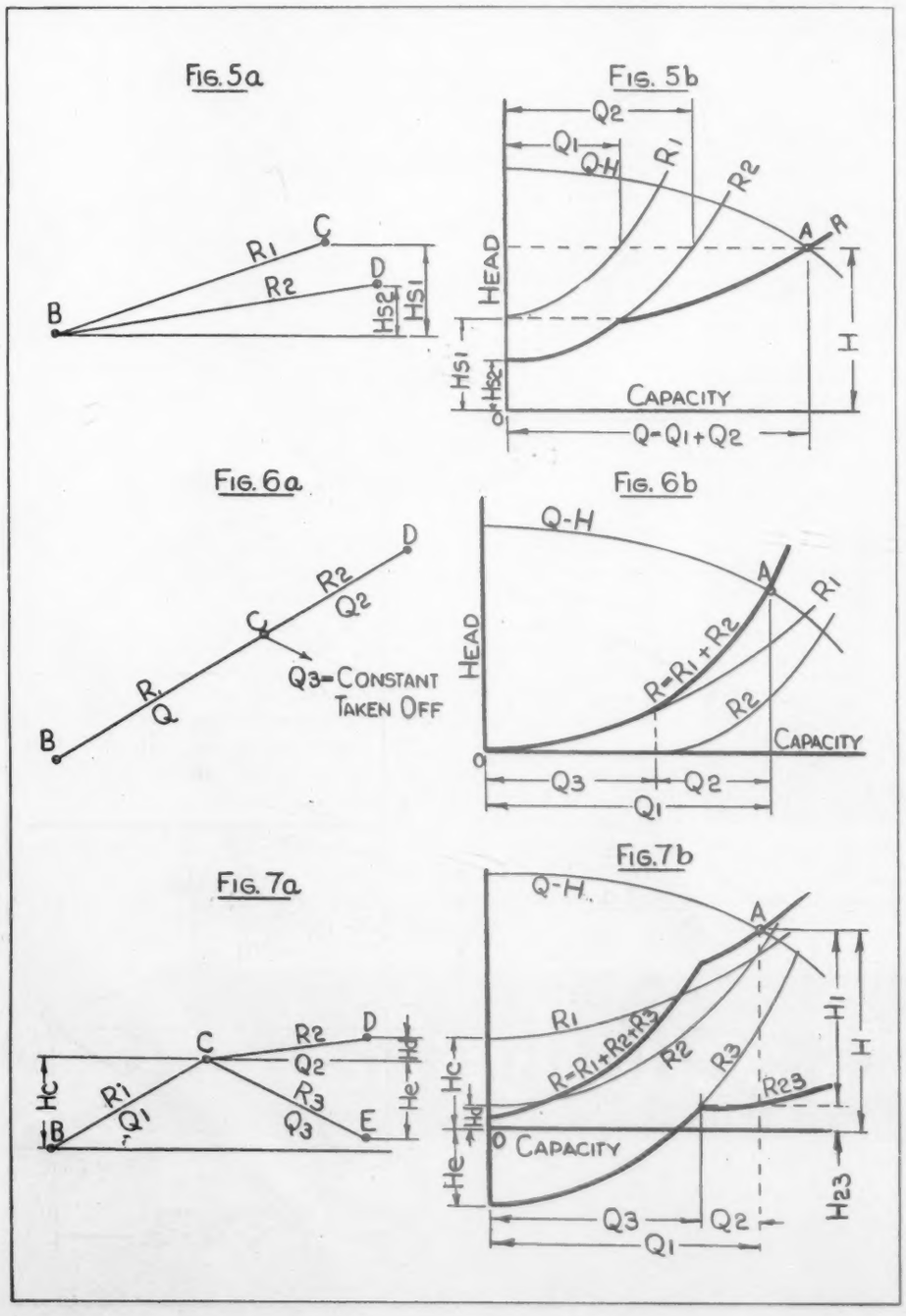
When the pipe line consists of two sections of different diameters, the combined pipe-line-resistance curve is obtained by adding the pipe-line resistance for a given capacity of the component parts of the pipe line. On Fig. 3*a*, suppose pumping takes place from point *B* to point *D*, point *D* being higher than point *B* by H_s feet. The pipe line from *B* to *C* is of diameter D_1, and from *C* to *D* is of diameter D_2. On Fig. 3*b*, the pipe-line-resistance curve is plotted for the section *BC*, curve R_1, and for the section *CD*, curve R_2. The combined pipe-line-resistance, curve *R*, is obtained by adding the ordinates for curves R_1 and R_2 and static head H_s. The operating point *A* is obtained as an intersection of the combined pipe-line-resistance curve *R* and the pump head-capacity curve *Q-H*.

2. Two parallel lines.

When the pump is working into two pipe lines discharging either at two different points or at the same point, the operating point is obtained as an intersection of the pump *Q-H* curve and the pipe-line-resistance curve, which is obtained by adding the capacities for given heads of the individual pipe lines. On Fig. 4*a*, suppose pump is at point *B* and pumping into two pipe lines to points *C* and *D*, located at the same elevation as point *B*. On Fig. 4*b*, R_1 is a pipe-line characteristic for the line *BC*. R_2 is a pipe-line-resistance curve for the line *BD*. The combined pipe-line-resistance curve *R* is obtained by adding capacities for the same head. The operating point *A* is obtained as an intersection of pipe-line-resistance curve *R* and pump head-capacity curve *Q-H*. The pump capacity *Q* will be a sum of the capacities Q_1 and Q_2 going through the line *BC* and *BD*, respectively, which are obtained by reference to the curves R_1 and R_2 for a given head *H*.

On Figs. 5*a* and 5*b* an example is presented similar to the one shown on Figs. 4*a* and 4*b*, but the points *C* and *D* are located higher than the point *B* by H_{s1} and H_{s2} feet. The procedure stays the same. On Fig. 5*b*, curve R_1 is pipe-line resistance for the line *BC*. Curve R_2 is pipe-line-resistance curve for the line *BD*, plotted in the manner previously explained. The combined pipe-line-resistance curve *R* is obtained by adding the capacities for given heads from the curves R_1 and R_2. The pump-operating point *A* is obtained as an intersection of the combined pipe-line-resistance curve *R* and the pump head-capacity curve *Q-H*. Of the total capacity *Q*, Q_1 would go to the point *C*, Q_2 to point *D*, which are read off from the curves R_1 and R_2 at the head *H*.

As another example, suppose we are to pump from point *B* to point *D*, Fig. 6*a*. At point *C* a constant quantity of liquid Q_3 is taken off. To find the operating point of a pump, proceed as follows: The pipe-line resistance for the section of pipe line *BC* is plotted in the regular way, curve R_1, Fig. 6*b*. The pipe-line resistance for the section *CD* is plotted with the zero point displaced with respect to head-capacity zero point by the capacity Q_3, which is going through the pipe section *BC* but is not going through the pipe section *CD*, curve R_2, Fig. 6*b*. The resistance



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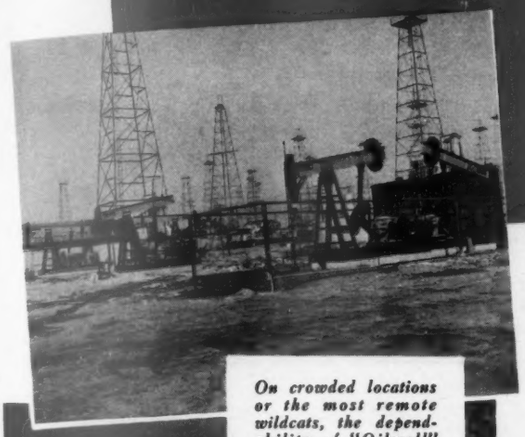

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★ **FULLY heat-treated, single-helical gears and pinions.** The long, efficient service rendered by precision-hobbed gears and pinions of this type fully warrants their use in pumping units that must, above all else, be dependable. Extra assurance of dependability is provided by such features as the "Oilwell" lubrication system, which keeps each bearing supplied with oil even when at rest. Strong, heavily ribbed cast gear cases assure rigid mounting and maintain alignment of all shafts and tapered roller bearings even when subjected to heaviest loads.

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of the complete pipe line *BD* is obtained by adding the pipe-line resistances for the same capacity from the curves R_1 and R_2 (curve *R*, Fig. 6*b*). The operating point *A* is obtained as the intersection of curve *Q-H*, with curve *R* in Fig. 6*b*. Of the total quantity, Q_1 going through the section *BC*, Q_3 is discharged at point *C* and Q_2 is going through the section *CD*.

As a last example, let us consider the case shown on Fig. 7*a*. The pump is installed at point *B* and is pumping to point *C*, quantity Q_1. The pipe-line resistance of section *BC* is marked R_1. Point *C* is located H_c feet higher than point *B*. At point *C* the pipe line is divided into two branches, *CD* with resistance R_2 with point *D* higher than point *C* by H_d feet, and section *CE* with resistance R_3 located H_e feet below point *C*. We are to determine the operating point on the *Q-H* curve of the pump and quantities Q_2 and Q_3 going through the sections *CD* and *CE*, respectively.

First, pipe-line resistance of the section *BC* is plotted, as explained before, the zero point of this curve being located H_c feet higher than zero head point. Then, the pipe resistance of R_2 is plotted in the same manner with zero point located H_d feet above the zero head line. Similiarly, R_3 is plotted with zero point placed H_e feet below zero head line. Then, combined resistance of the line *CD* and *CE* is constructed by adding capacities for the same heads, line R_{23}. Finally, the combined pipe-line resistance of the whole system is constructed by combining R_1 and R_{23} by adding the pipe-line resistances for the same capacities from these two curves (curve *R*, Fig. 7*b*). The operating point *A* is obtained as the intersection of the pipe-line resistance *R* and the pump head-capacity curve *Q-H*. The capacity Q_1 is going through the section *BC*. Of the total head *H*, H_1 is required to deliver the capacity Q_1 to the point *C*, and H_{23} is the pressure available at point *C* to deliver the capacities Q_2 and Q_3 to points *D* and *E*, respectively. The capacity Q_3, going through the section *CE* is read off from the curve R_3 for the head H_{23}, and the difference between capacity Q_1 and Q_3 is delivered to the point *D*.

3. Several stations on the line.

In all the considered cases, only one pumping station was assumed, which is possible when the total pressure required does not exceed the maximum pressure possible for the size and types of pipes used. When the total pressure to pump the liquid through the complete pipe line is exceeding that limit, more than one station will be required. Also, it was assumed that the pipe line between the initial and final point is installed through a flat country, and when the two points are at different elevations, that the slope between the two points is gradual. The solution of the pipe-line problem in a more general case, with total pressure derived from more than one station and with intermediate points between the stations located higher than the initial or final points involves the study of the hydraulic gradient of the pipe line.

A more general case will be considered now, and particular attention will be given to the question of how the topography of the pipe-line location affects the pumping problem. The determination of the operating point of the centrifugal pump working on the pipe line in a general case is also obtained graphically as an intersection of the pump head-capacity curve and the pipe-line characteristic, as already explained. However, to obtain the correct result, a number of questions should be considered which may affect the pump operating point.

The whole problem can be split up into several simpler questions which should be settled before the pump selection and the pump-operating point can be determined. These questions are:

1. Determination of the total pressure required to overcome the resistance of the whole pipe line. This involves the selection of the most economical pipe size and the selection of the proper coefficient of friction, depending on the type of liquid to be pumped, its viscosity, and viscosity variation throughout the year. The pump manufacturers are seldom concerned with this question. The head-capacity requirements are given to the pump manufacturer, calculated for one liquid of a given viscosity. The variation of viscosity as a result of change of liquid or temperature would affect the quantity of liquid going through the pipe line, which can be determined in the same manner as outlined.

2. The second question is the distribution of the total pressure among several stations. This is governed by the maximum pressure permissible for the pipe line and to a lesser degree by the topography of the pipe-line location. As a rule, identical pumping stations are desirable but not always possible. Very frequently the actual location of the pumping station is dictated by accessibility of location, power lines, and water supply. It is evident that the stations are not necessarily located at equal distances, as some of the stations may have to overcome considerable static heads in addition to the pipe-line friction, while other stations may have differences in elevation, adding to the total head produced by the pumps.

To deal with problems of this kind, a study of the "hydraulic gradient" of the pipe line is very helpful.

4. Hydraulic gradient.

The hydraulic gradient of a pipe line is a curve which shows by its ordinates the pressures above the atmosphere at any point of the pipe line. This curve is plotted against the pipe-line length as abscissas. On Fig. 8, if a pump is installed at a point *A* to pump to point *B*, which is H_s feet higher than *A*, and if the total pipe-line resistance is H_1, the pump total head will be *H*. If the pipe line is of the same diameter, the hydraulic gradient will be a straight line *CB*. Dis-

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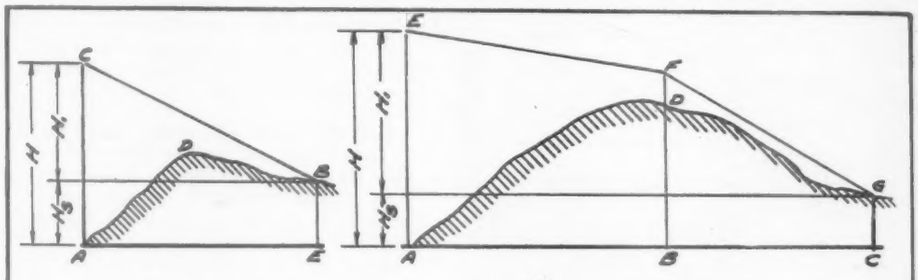


Fig. 8.

Fig. 9.

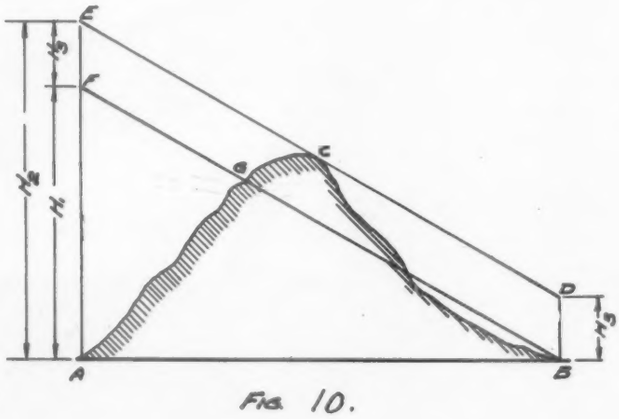


Fig. 10.

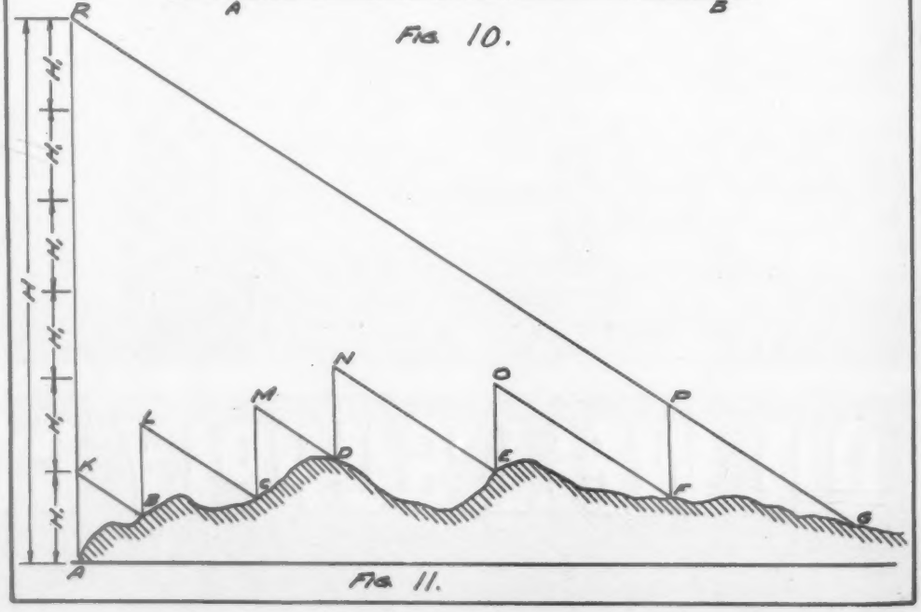
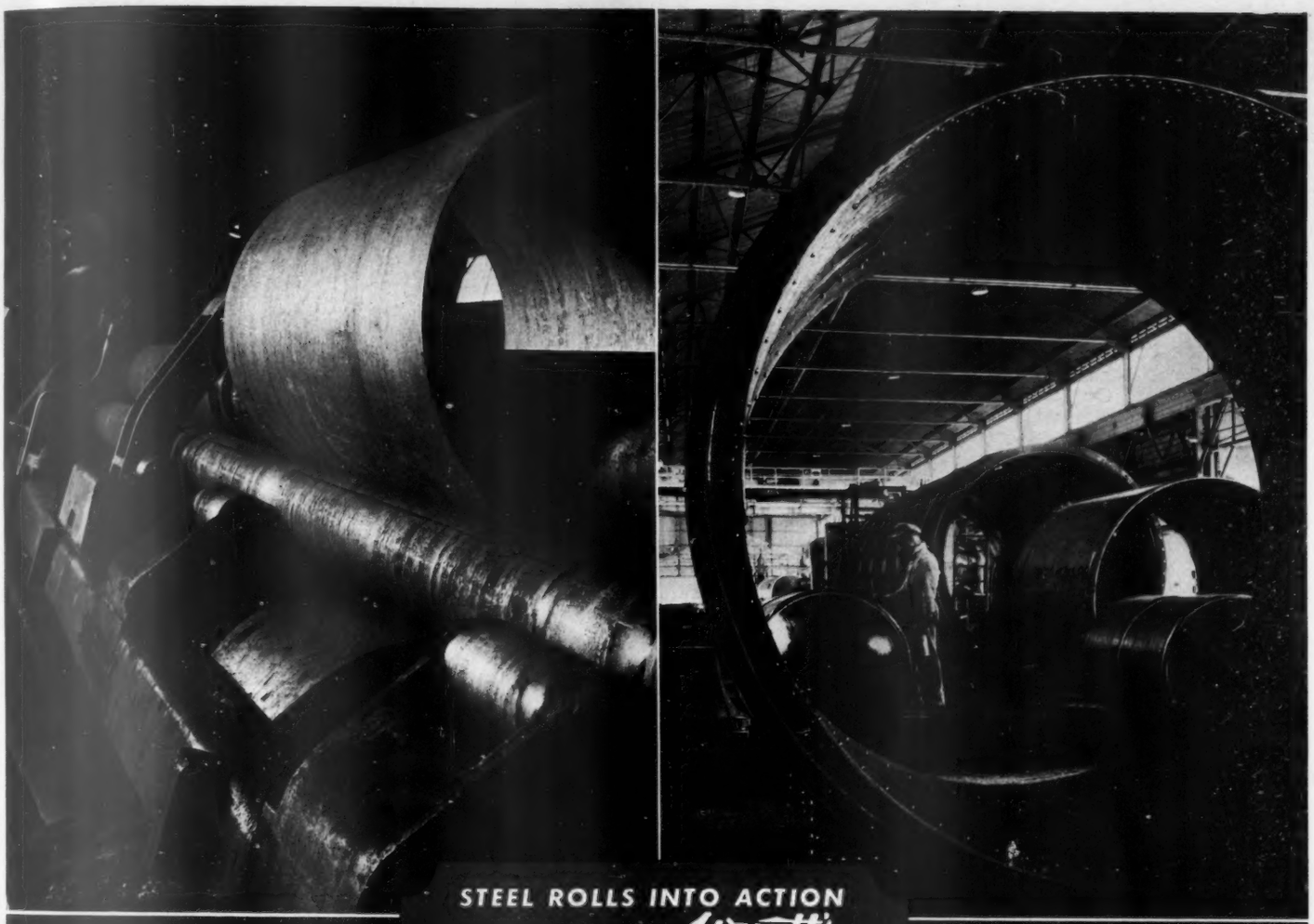


Fig. 11.



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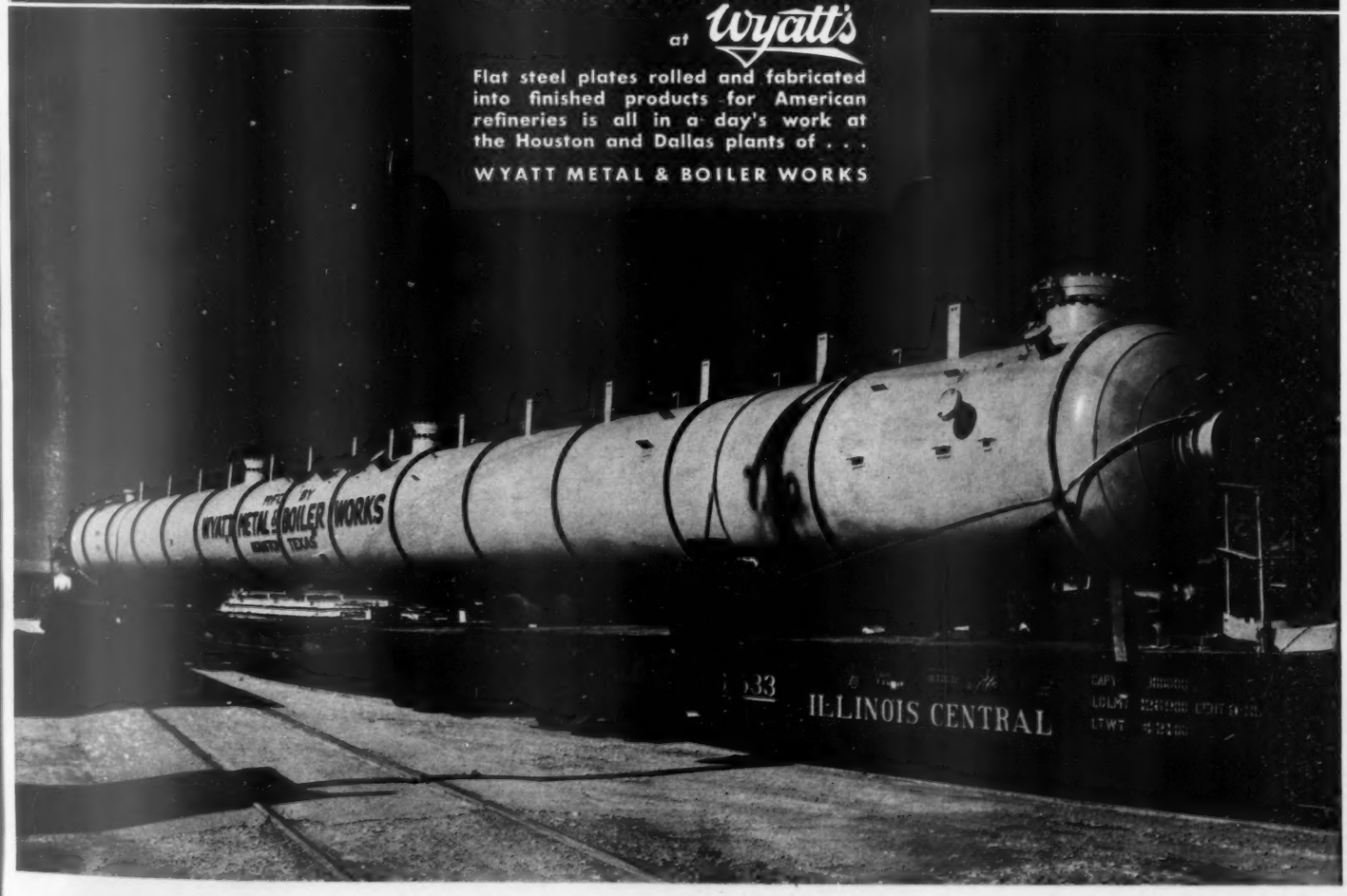


WELL LOGS and FIELD DATA . . . . of Active Oil Areas

Western and Central Kansas

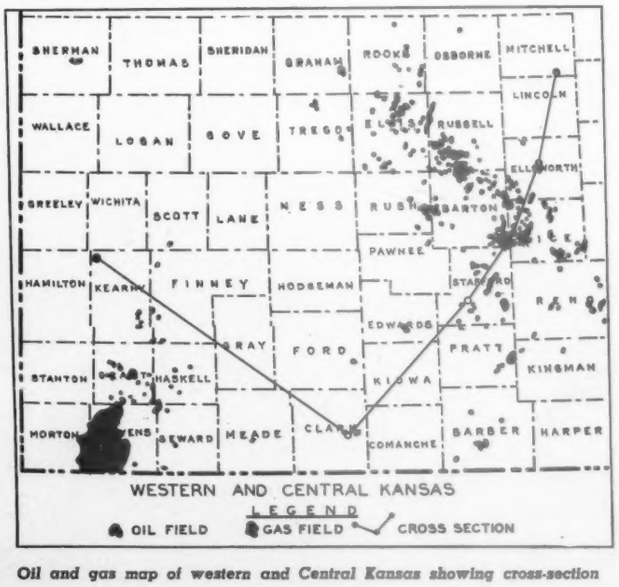
(Compiled by The Oil and Gas Journal)

GENERAL GEOLOGY: The dominant feature of western Kansas is the Central Kansas uplift or Barton arch. The thinning of all formations over the arch indicates that it began to rise during the early Paleozoic and this rise continued at least until the middle Pennsylvanian. From this time on, the regional movement changed and a west dip developed, with thickening of deposits formed downdip. In the lower Permian, the area formed a part of the great Permian basin which extended into West Texas, and salt, gypsum and anhydrite were deposited in basins cut off from the areas of marine submergence, together with red beds of fresh-water and continental origin.

The lower Permian marine submergence was not long-lived so that there is a relatively small Permian lime section in the area. This produces, however, in the great Hugoton gas field so that the Permian is a possible reservoir over a large part of the southwestern section of the area.

Prior to the close of the Pennsylvanian, the sea entered the region from two main directions: from the northeast through the Salina basin, and from the south through the Dodge City basin, as the north end of the Anadarko basin of Oklahoma is called. During at least a part of the period invasions of the sea also came from the northwest so that some of the area is related to that of Wyoming.

The oil and gas of the area is largely associated with surfaces of unconformity caused by the retreat of the sea, either by withdrawal from the whole area or by uplift of the arch. During the period when the granite was exposed to erosion, basal conglomerates and sandstones were formed, particularly during the Cambrian and lower Pennsylvanian periods. Both of these basal formations are productive, the former being referred to as "Reagan," "La Motte" or "Gorham" sand and the latter as the "Sooy" conglomerate. Cambrian production is found largely along the crest of the arch from Russell County to the northwest. The Sooy produces over a wider area extending from Rice County to the northwest and in places it appears to be in direct contact with the Gorham sand so that where there are no other pre-Pennsylvanian formations present, there is some doubt regarding the age of the basal pay. A third basal sand is found below the Mississippian shales and has been called the "Misener" sand. In McPherson County, where this sand lies above the Hunton, it is probable that it can be related definitely to the Misener of Oklahoma, but in Stafford County, where both the Hunton and Sylvan are missing from the section and the "Misener" rests directly on the Viola, it is not clear that it is true Misener.



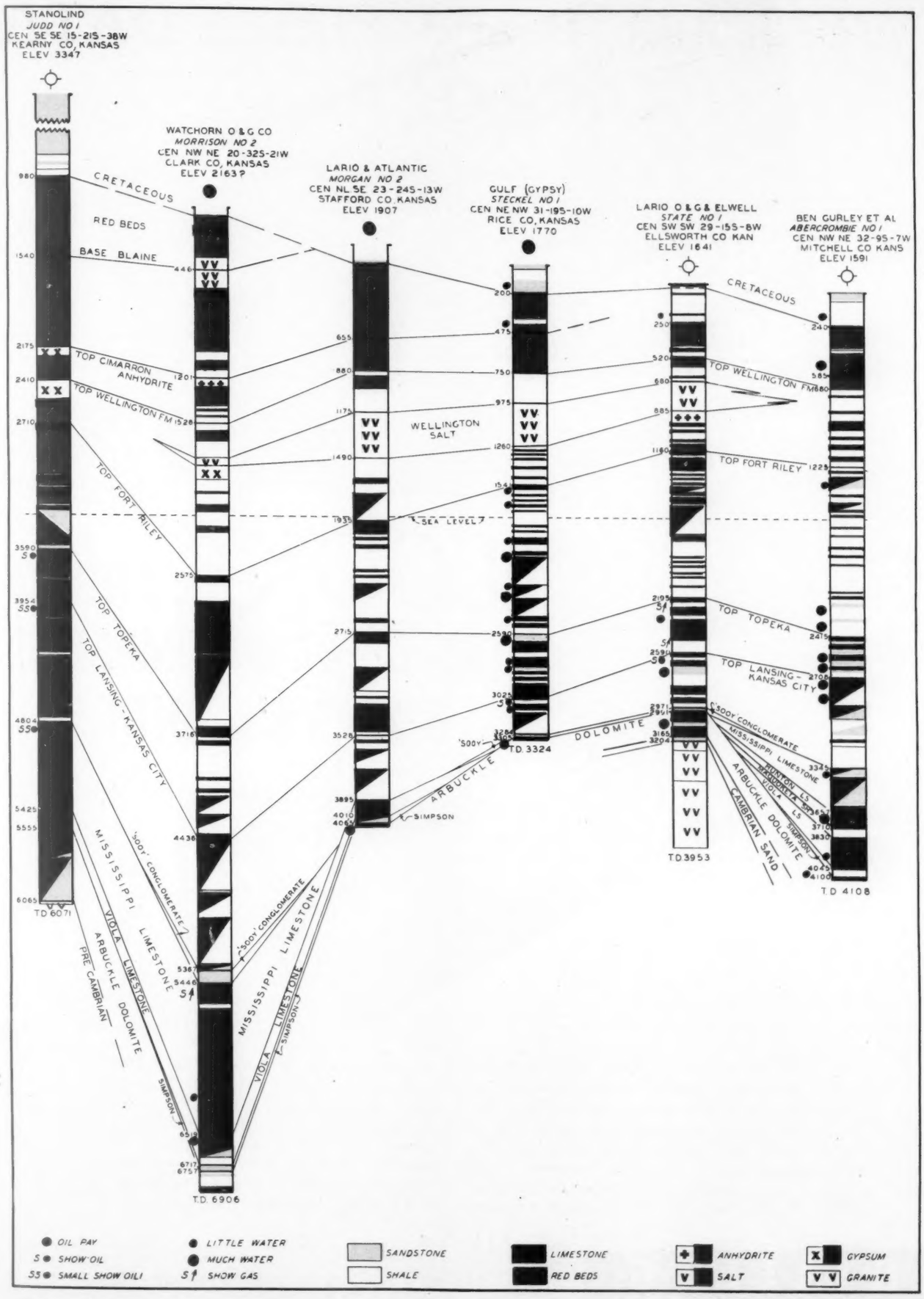
Oil and gas map of western and Central Kansas showing cross-section

STRUCTURAL RELATIONS: The great bulk of the production of western Kansas has been found along the Barton arch. Concentration of production has been found in three major areas, the Silica district in Barton and Rice counties, the Trapp district in Barton and Russell counties and the Bemis-Burnett area in Ellis County. These major producing areas are found where the arch is traversed by crosstrends and there is a growing mass of evidence to the effect that these crosstrends may be projected into the basin to the southwest. Thus a number of fields have been found in Stafford County southwest of the Silica district, the Otis field and other pools in Pawnee and southwest Barton counties lie southwest of Trapp and pools in Trego, Ness and southwest Ellis counties may be considered to be associated with the Bemis-Burnett crossfold. The relationship between these crossfolds and the Hugoton area or other scattered producing sections in southwestern Kansas is not yet clear.

POSSIBILITIES: That production is obtained from basal sands and conglomerates lying on erosion surfaces has already been pointed out. In addition, there are also possibilities for production in limestones which have been subjected to erosion and are now found below unconformities. Other things being equal, more porosity will be developed during a long period of erosion than during a short one, so that the most prolific limestone pays should be found at a point where the overlying formation is much younger than the limestone. This is particularly true of the Arbuckle which produces much more oil on the crest of the arch where it is overlain by the Pennsylvanian than elsewhere in the area where Viola or other Lower Paleozoic beds are present.

Four other limestone formations produce over much of the area. The Viola produces along the south flank of the arch, particularly in the "wedge edge" area in Stafford and Reno counties. This is not due so much to the "stratigraphic trap" as to the fact that the Sylvan and Hunton were either not deposited over this wedge edge or were removed by erosion and the length of time during which the lime was subjected to erosion was correspondingly long. The Hunton is not a noteworthy producer west of McPherson and Reno counties, mainly because the best possibilities for Hunton production lie farther down the flank of the arch than the present area of intensive exploration. The same is true of the Mississippi lime although the existence of Mississippi lime production in the Shallow Water pool of Scott County indicates that this formation may be of considerable importance. The Kansas City-Lansing limestone produces on the crest of the arch and to some extent down the flanks.

Sand production is not of great importance in the region. The Wilcox sand has been disappointing where it has been found productive. The newly discovered Patterson pool in Kearny County appears to be of much greater importance as it was found in sands of Pennsylvanian age which may eventually be correlated with the sands in the Minnelusa of eastern Wyoming in the Lance Creek field.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CEN NL SE 23-24S-13W
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GULF (GYPSY)
STECKEL NO 1
CEN NE NW 31-19S-10W
RICE CO, KANSAS
ELEV 1770
LARIO O & G & ELWELL
STATE NO 1
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PRE CAMBRIAN
SIMPSON
DOLOMITE
ARBUCKLE
CAMBRIAN SAND
SIMPSON SAND
VIOLA LS
HUNTON LS
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TD. 6906
TD. 3324
TD3953
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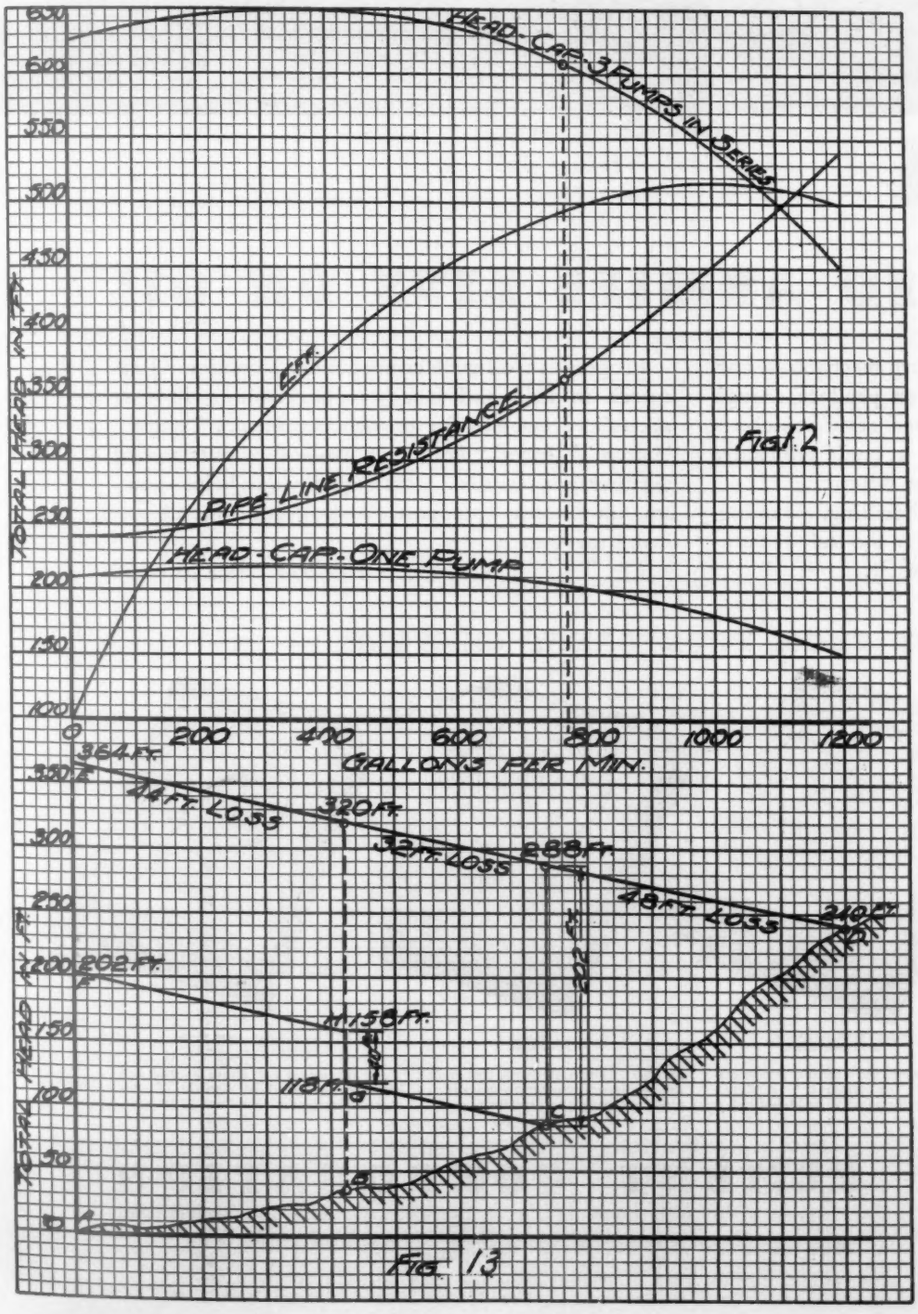
tance *AE* is the pipe-line length. If the pipe-line profile is shown on the same diagram curve *ADB*, then vertical distances between line *CB* and curve *ADB* will indicate pressures prevailing at various points of the pipe line above the atmosphere. If the pipe line consists of two sections of different diameters, then the hydraulic gradient line would have a break in the slope at the point where there is a change in the pipe size. On Fig. 9, supposing the pipe line from *A* to *D* is of larger diameter than from *D* to *C*, then the hydraulic gradient line would have a change of slope at point *F*, the part *FG* having a greater slope due to the greater pipe resistance of a smaller size of pipe.

Gradient Line Above Profile

By referring to Fig. 9, it should be noted that the hydraulic gradient line should not be below the pipe-line profile line at any point, as this would indicate the pressures in the pipe line below the atmosphere or vacuum, and the pipe line would not perform normally under such conditions. This question is so important that it may affect the pump and pipe-size selection and station location.

Supposing the pipe line on Fig. 10 is led from point *A* to *B* over a hill with a peak at *C*. The total pipe-line resistance is H_1. By drawing the hydraulic gradient line *FB*, we notice that this line intersects the pipe-line profile curve at point *G*. All points above that point are located above the hydraulic gradient; therefore there would be a vacuum in the pipe line. For a given capacity the pipe-line resistance from point *A* to *G* is such that there would be no pressure available at *G* to lift the liquid over the crest of the hill. To overcome the difficulty, the pump pressure should be increased from H_1 to H_2 so that point *C* is below the hydraulic gradient line. The slope of the new hydraulic gradient line would be the same as the first one, as this is determined by the pipe-line friction, which is fixed. Therefore, there will be an excess of pressure available at point *B* by the amount of H_2, which is the increase in pump pressure to carry the liquid over the hill. This excess of head available at *B* should be destroyed by throttling or be utilized as an increased suction pressure on the pump at point *B*, or the pipe line will run only partly filled with increased velocities wasting this excessive head in friction. If part of the pipe line *CB* is not vented, vacuum can be formed at certain places disturbing the normal pipe-line operation. It is evident that section *CB* of the pipe line could be of a smaller diameter, utilizing the extra head necessary to carry the liquid over the hill, to overcome the greater resistance of pipe of smaller diameter, and realizing the saving in first cost possible with the smaller line.



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Then at point *B* on a vertical line, the total head produced by this station H_1 is laid off. From point *L* a line is drawn parallel to the hydraulic gradient slope until it intersects the profile line at point *C*, which will be the location of the third station. The locations of the rest of the stations are obtained in the same manner. It will be noted that the stations are not equally spaced, although it was assumed that the head produced by each station are equal. This method takes care automatically of the difference in elevation of several stations, which results in the station-spacing difference.

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for deepest wells. Extra slow setting, longer and easier pumpability at highest temperatures; higher strengths.

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for deep wells. Slow setting; pumps easily at high temperatures. 5 years' successful performance in deep, hot holes.

'INCOR'
for wells of moderate depth. Earlier drill out, wells on production quicker. 14 years' successful performance.

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SAFETY and relief valves are used widely in all branches of the petroleum industry. A pop safety valve is one whose opening and closing action is definitely established and whose design and capacity ratings are in accordance with codes and regulations. Relief valves do not have a definitely established opening and closing pressure.

The majority of safety and relief valves in use at the present time are of the spring-loaded type, although there are a number of weight-loaded, diaphragm and frangible disk valves in use. The set pressure of the valve is the pressure at which the valve opens and begins to discharge; the accumulated pressure is the pressure above the set pressure necessary to obtain a given capacity and the blowdown is the differential between the opening and the closing pressures.

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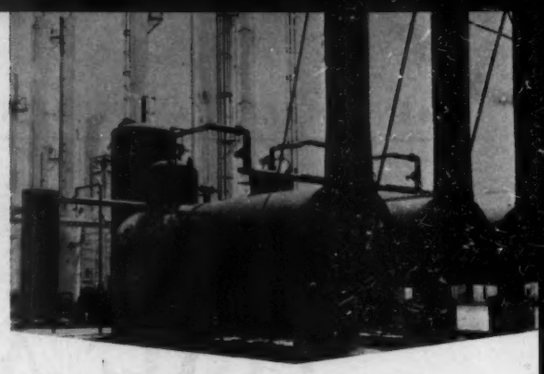

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Lion Oil Refining Co. Revamps Recovery System

(Continued from Page 37)

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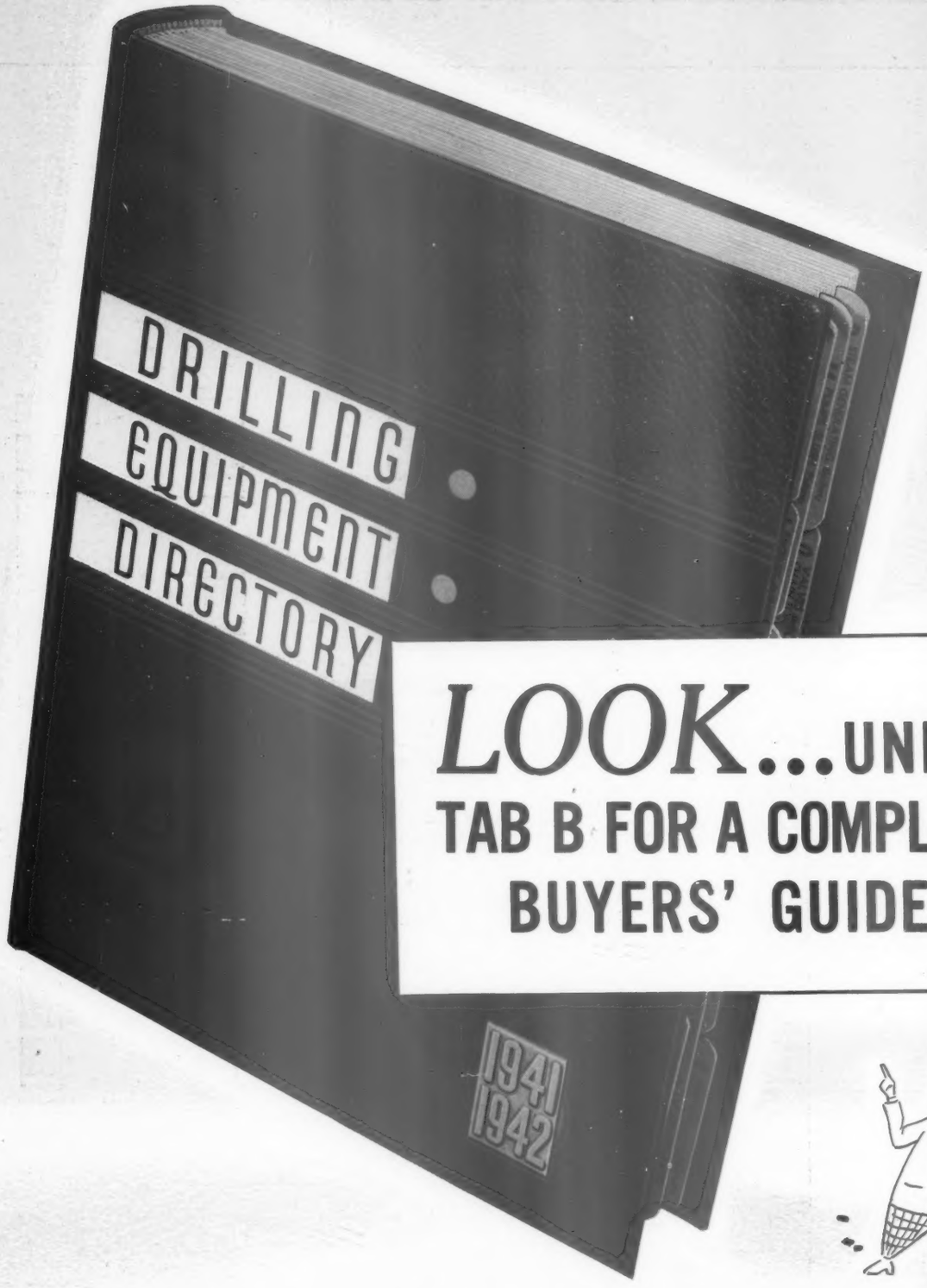
Unstabilized light gasoline, the overhead product from the stripping still, is condensed and collected in the stabilizer feed accumulator which also serves as a receiver for drip gasoline resulting from compressing the low-pressure gases.

In order to recover the maximum quantity of unsaturated propanes and butanes for poly-feed stock, some stabilized gasoline is recirculated into the condensed stripping still overhead in order to effect condensation of these components at the still pressure. Uncondensed gases passing from the stabilizer-feed accumulator enter a reabsorber to recover propanes and butanes not reclaimed in the main absorber. The unstabilized gasoline is passed to a conventional stabilizing unit which is operated to produce an 18-lb. vapor pressure light blending material as a bottom product, which after caustic washing to remove hydrogen sulfide and mercaptans, is sent to storage. The overhead from the stabilizer is passed to the Girdler desulfurization unit where it is mixed with cracked gasoline stabilizer overhead prior to the removal of hydrogen sulfide and utilization of the stock as poly feed. The combined gases, after passing through the Girdler unit, are then caustic and water washed which results in a hydrogen sulfide-free as well as mercaptan-free charging stock. The gas is then compressed to 300 lb. per sq. in. and, after passing through a condenser, is collected as a liquid in the poly-feed accumulator. The liquid feed is then pumped through a heater into two catalyst chambers which operate in series. In order to control the exothermic heat of reaction, a depropanizer tower sidecut is quenched into the inlet of 9 of the 10 catalyst beds contained in the two chambers. The effluent from the catalyst chambers passes through a cooler before flashing into the depropanizer where propane and lighter compounds are removed overhead to the fuel system. The depropanizer bottoms product, consisting of poly gasoline, butane, and sufficient propane to give a butane product of the desired vapor pressure, is passed to the debutanizer where commercial butane is produced overhead and 12-lb. vapor pressure poly gas is the resultant bottoms product. Heat is supplied to the depropanizer and debutanizer towers by reboilers operating on 250-lb. per sq. in. steam.

The poly gasoline thus produced has a motor-fuel blending value of 115 and is sent to storage to be used in blending with the other refinery production. The butane is placed in pressure storage to be marketed or used as a blending agent in motor fuel as season needs change.



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tance *AE* is the pipe-line length. If the pipe-line profile is shown on the same diagram curve *ADB*, then vertical distances between line *CB* and curve *ADB* will indicate pressures prevailing at various points of the pipe line above the atmosphere. If the pipe line consists of two sections of different diameters, then the hydraulic gradient line would have a break in the slope at the point where there is a change in the pipe size. On Fig. 9, supposing the pipe line from *A* to *D* is of larger diameter than from *D* to *C*, then the hydraulic gradient line would have a change of slope at point *F*, the part *FG* having a greater slope due to the greater pipe resistance of a smaller size of pipe.

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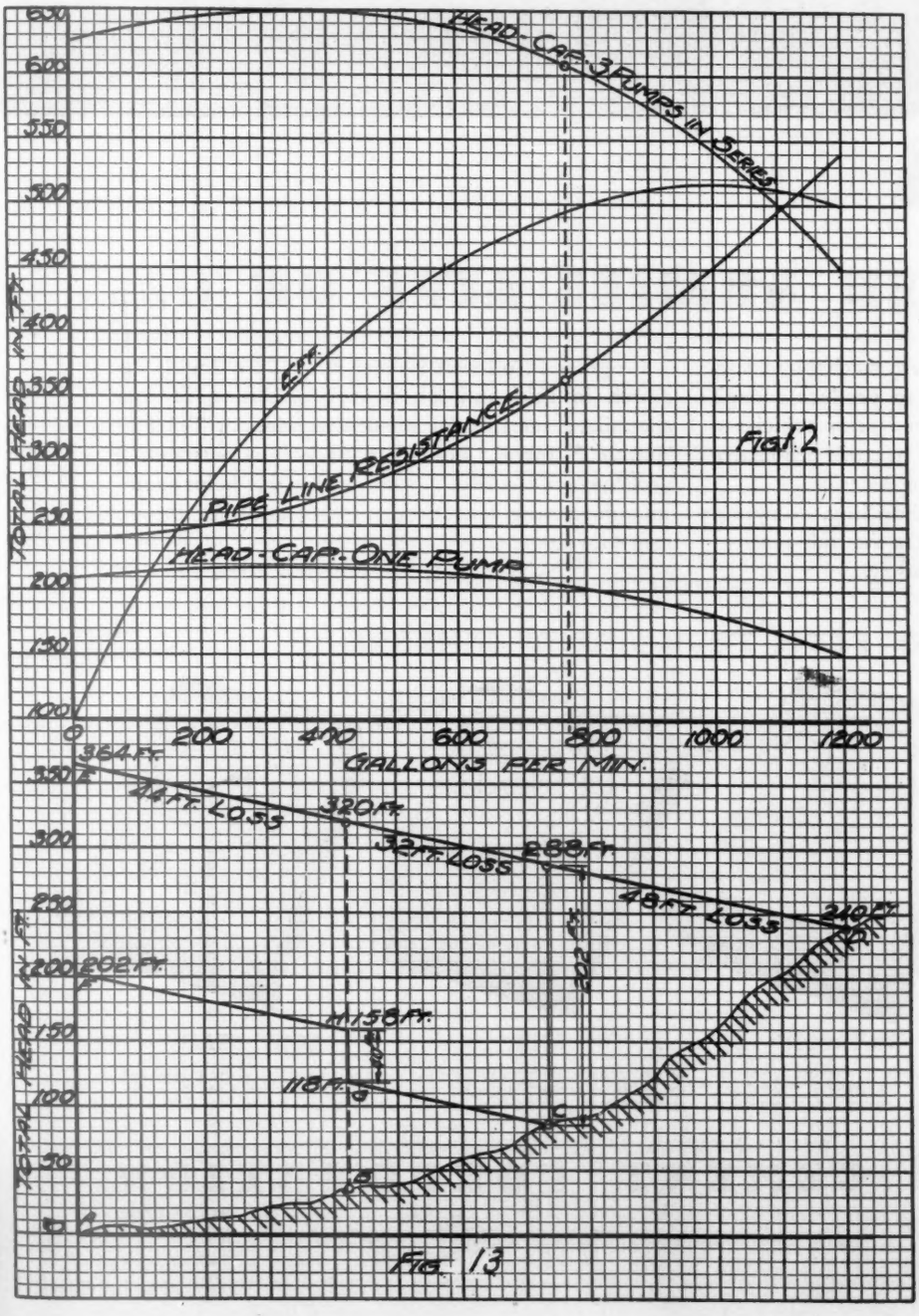

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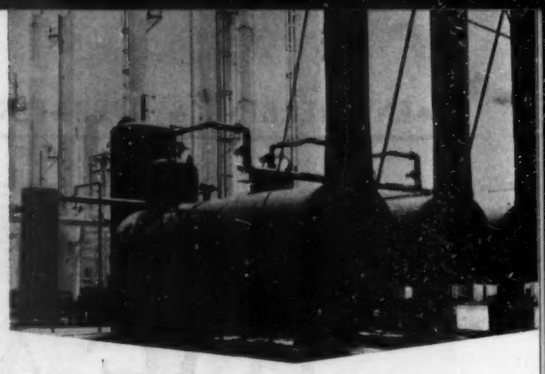

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flashed, rich oil is then increased by passing through a steam heater before flashing into the still which is equipped with a reboiler to facilitate thorough stripping. Lean oil leaving the still passes through lean-to-rich oil exchangers and an oil cooler before entering a surge tank from which it is recirculated.

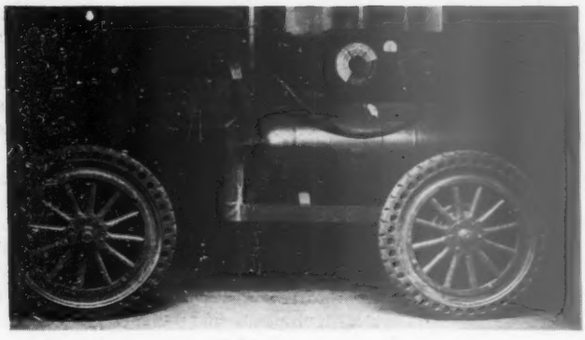
Unstabilized light gasoline, the overhead product from the stripping still, is condensed and collected in the stabilizer feed accumulator which also serves as a receiver for drip gasoline resulting from compressing the low-pressure gases.

In order to recover the maximum quantity of unsaturated propanes and butanes for poly-feed stock, some stabilized gasoline is recirculated into the condensed stripping still overhead in order to effect condensation of these components at the still pressure. Uncondensed gases passing from the stabilizer-feed accumulator enter a reabsorber to recover propanes and butanes not reclaimed in the main absorber. The unstabilized gasoline is passed to a conventional stabilizing unit which is operated to produce an 18-lb. vapor pressure light blending material as a bottom product, which after caustic washing to remove hydrogen sulfide and mercaptans, is sent to storage. The overhead from the stabilizer is passed to the Girdler desulfurization unit where it is mixed with cracked gasoline stabilizer overhead prior to the removal of hydrogen sulfide and utilization of the stock as poly feed. The combined gases, after passing through the Girdler unit, are then caustic and water washed which results in a hydrogen sulfide-free as well as mercaptan-free charging stock. The gas is then compressed to 300 lb. per sq. in. and, after passing through a condenser, is collected as a liquid in the poly-feed accumulator. The liquid feed is then pumped through a heater into two catalyst chambers which operate in series. In order to control the exothermic heat of reaction, a depropanizer tower sidecut is quenched into the inlet of 9 of the 10 catalyst beds contained in the two chambers. The effluent from the catalyst chambers passes through a cooler before flashing into the depropanizer where propane and lighter compounds are removed overhead to the fuel system. The depropanizer bottoms product, consisting of poly gasoline, butane, and sufficient propane to give a butane product of the desired vapor pressure, is passed to the debutanizer where commercial butane is produced overhead and 12-lb. vapor pressure poly gas is the resultant bottoms product. Heat is supplied to the depropanizer and debutanizer towers by reboilers operating on 250-lb. per sq. in. steam.

The poly gasoline thus produced has a motor-fuel blending value of 115 and is sent to storage to be used in blending with the other refinery production. The butane is placed in pressure storage to be marketed or used as a blending agent in motor fuel as season needs change.

Refinery IDEAS

. . . that save $ $ $



One-Man Welding Truck ↑

The efficient welding truck shown here can be handled easily by one man though it is usually towed through the refinery yard by a truck. The electrode and ground cables mounted on the reels at the left are so hooked up as to provide continuous service even when they are being reeled or unreeled. The cable at right is for an alternating current motor. Welding rod and tool boxes are located under the ground cable reel, second from the left. The frame is all welded and is mounted on solid rubber-tired wheels.

Use Suspended Grinder From Above ←

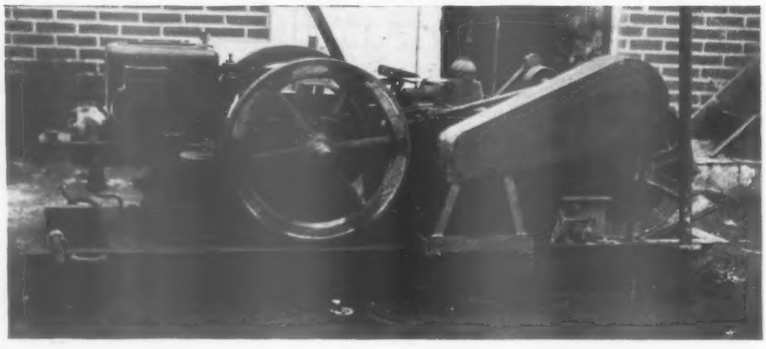
Grinding can be a very tedious operation. It is made an easier task in this refinery shop where the grinding wheel is suspended from an overhead support by a spring. The object which is to be ground is placed on the table and the wheel is held down by handles on either side. The tension of the spring is light enough that it requires little effort to hold wheel in place. The steel-plate arm that separates the motor and grinding wheel is sufficiently heavy to hold the assembly rigid and in tension.

Modified Bolt Used as Safety-Door Lock ←

Doors on buildings where fire or explosive hazards are greatest are equipped with quick-opening latches in this refinery. The head of the bolt which fits into the catch is rounded. The bolt is mounted on a spring strong enough to hold the rounded head of the bolt into the hole of the catch under the normal stress of drafts. However, a slightly greater pressure forces the bolt back into the sleeve of the latch and the door is opened readily.

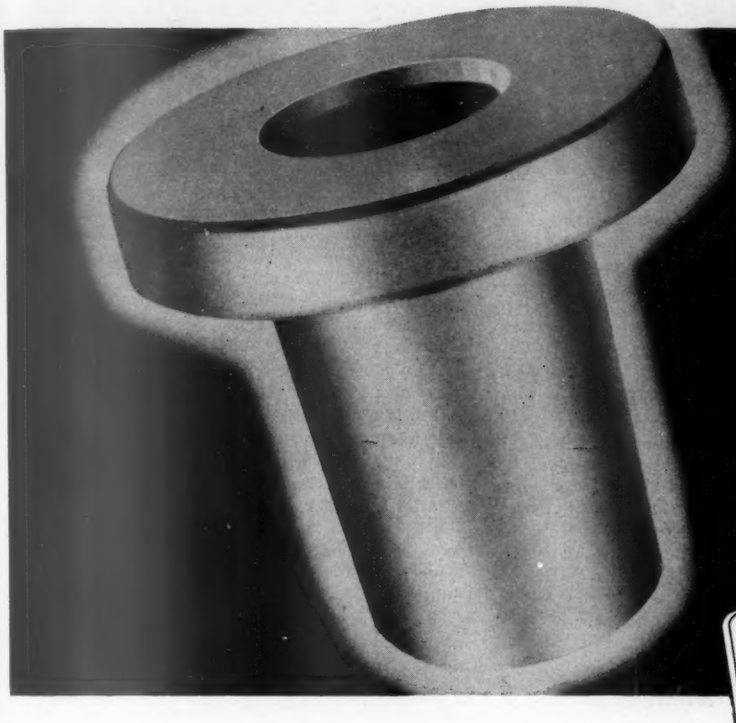
Assemble Portable Hoist From Discarded Parts ↓

Discarded equipment was used entirely in the construction of this portable hoist. Power is provided by an old two-cycle gas engine, the speed is controlled by a transmission taken from a junked truck and the hoist was removed from an old tractor. The frame is all-welded.



Old Tank Serves as Dust Collector →

Revivified bauxite is cooled by forced draft in this refinery. In order to avoid the resultant dust circulation an old tank, shown in the accompanying picture, is used as a dust collector. Dust from the cooler enters the collector through the gooseneck shown at the top. Two objectives are satisfied in this procedure. The dust is not allowed to enter the atmosphere around the refinery and its removal retains the high degree of porosity desired for the filter bed. Abrasion of the bauxite is held to a minimum when revivifying it but some dusting is unavoidable and when this happens it is essential the dust be removed if later "caking" is to be avoided.



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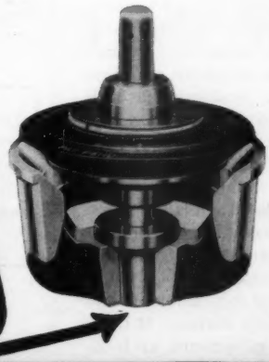

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Progress in METALS

By W. L. NELSON

New Condenser-Tube Alloys

Abstract: "Service Experience With the Newer Condenser-Tube Alloys," Mechanical Engineering, Vol. 63, September 1941, p. 653. Taken from the October issue of Metals and Alloys.

ADMIRALTY, Muntz, and arsenical copper for condenser tubes have been supplemented during the past decade by a new group of alloys including among others aluminum brass, aluminum bronze, copper-nickel, copper-nickel-zinc, and copper-nickel-tin, to meet the demand for condenser tubes with superior corrosion and erosion-resistant properties. The A.S.M.E. Special Research Committee on condenser tubes in its 1940 report has surveyed experience with this new group of alloys in the condenser-tube field.

The aluminum-brass type is being employed in increasing amounts in power-station condensers using salt water. The 70 copper-30 nickel type showed the best all-around corrosion resistance to salt water aboard naval vessels. However, the copper-nickel alloys have not proved satisfactory around tidewater and contaminated harbor water. High copper-tin-bronze will give longer service where circulating waters are high in acid.

A public-utility company on the West Coast using sea water at velocities of 5-6 ft. per second learned through actual installation experiments that aluminum-brass condenser tubes are far superior for their purposes to those of the admiralty alloy.

A total of 39 tubes, representing 12 different alloys, submitted by nine different manufacturers, were given short-time tests. The lowest relative corrosion rate (referred to admiralty as 1.00) was 0.75 per cent for aluminum-brass tube, while the highest was 21.25 per cent for a red brass tube.

A study of the data indicated a distinct grouping of the tubes according to their chemical compositions. The first group includes only those tubes containing aluminum; the second, the cupronickel tubes; and third, the admiralty and miscellaneous alloys. The divisions between the groups were marked and indicate that this grouping was no accidental occurrence.

A further conclusion reached was that in the aluminum-brass group, annealed tubes are superior to the hard-drawn tubes, and that the optimum aluminum content is close to 2.5 per cent.

A public utility in the East on an inland river, contaminated with a large percentage of acid mine drainage, ran tests with condenser tubes of various alloys. The relative corrosion rate was lowest with tubes of 88 per cent Cu, 10 Zn, and 2 Sn.

Another power plant on the Atlantic seaboard using harbor water containing considerable sewage and factory wastes, reported that inlet-end corrosion was almost entirely eliminated with the use of aluminum-brass tubes. Still another company on the Atlantic seaboard reported that tubes with 20-30 per cent Ni content do not have as much resistance to inlet-end cavitation as aluminum-bronze and aluminum-brass tubes.

The Bureau of Ships continues to specify the uses of (70-30) copper-nickel tubes and tube sheets in the construction of all heat exchangers, including condensers employing salt water as the cooling medium. To date, the performance of copper-nickel tubes has been most satisfactory.

Supplies of Strategic Metals and Alloys

IT is the belief of the metallurgical staff of The Oil and Gas Journal that up-to-date surveys of the supplies of strategic metals that are available, are one way to keep industry operating at a high rate. This is particularly important because bottlenecks in obtaining metals leap about from one metal to another as substitute metals and alloys are sought. An example is the present tightness in vanadium which has been brought about by the substitution of chromium vanadium for chromium-nickel steels, and the shortages of copper and lead that are becoming serious.

According to Editor Thum of Metal Progress (Conservation and Substitution Required by Metal Shortages, Vol. 40, September 1941, p. 293) only four metals are now readily available, among which are antimony, mercury, and molybdenum. Consultants of the OPM concur in Mr. Thum's conclusions.

A recent summary by Metals and Alloys (October 1941, p. 620) is given here:

"For *aluminum*, facilities for producing between 500 and 700 million pounds a year are now available, but demands will be in excess of 1,400 million pounds a year very soon. Capacity and power will not be available for production at this rate until January 1943. The 10 million pounds of 'housewives' scrap' recently collected was sold to secondary smelters and will be used to make a high-iron mixture useful for killing steel.

"*Antimony* is still satisfactorily available. There is about 1 year's supply (750,000 tons of ore) of strategic *chromium*, so this metal must be rigidly conserved. *Copper* is practically a 'precious' metal, with a total of 1,600,000 tons available and 1,250,000 tons of this needed for defense. If there is an increase in defense requirements, as is altogether possible, the available supply for civilian use may vanish.

"*Lead* for the first time is under pressure, and its commercial condition is worse than tin's. *Tin*, a very 'strategic' metal, is barely holding its own, with a small stock pile growing, through conservation and substitution. (Read "Tin Conservation," in Metals and Alloys for August, p. 187.)

"*Mercury*, also 'strategic,' is no problem at all and may never be one. *Zinc*, currently available for all defense and 'basic' civilian requirements, will continue to be denied to nonessential-product manufacturers and may in time even be hard to get, for essential demands.

"*Magnesium*, with its normal 12 million pounds annual production upped to 20 million this year and an increase to 34 million to be completed in 1942, seemed to be well in hand, at least for aircraft castings. But demands for the fire-bombs and flares have raised expected demands to 400 million pounds a year so that absolutely new and at present uncharted supply sources must be tapped.

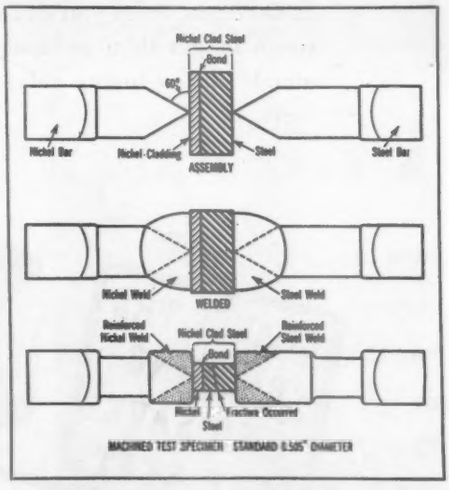
"*Manganese*, the most notoriously strategic metal, is a many-sided problem. At present we are holding our own, but demands are increasing and eventually can possibly be met only by full exploitation of low-grade domestic ore and use of our manganiferous iron ores—if indeed these measures will suffice.

"*Molybdenum*, currently being used to replace just about everything else that is an 'alloy' in steel, is officially believed to be available in easily adequate amounts, although the author believes that even with moly there is trouble ahead. *Nickel* is still very short, and subject to the most drastic kind of replacement wherever possible.

"The *steel* situation is badly complicated. OPM has asked for a 10-million-ton increase in steel capacity, which is now just barely adequate for munitions, defense, essential-industry, lease-lend, and basic civilian requirements. This increase in capacity will itself consume about 4.2 million tons of steel for plant. The steel shortage is as much a shortage of pig iron and scrap as of insufficient open-hearth and rolling-mill capacity. The scrap supply can be augmented by intensified collection and concentration, but no added pig-iron capacity can become effective for 15 months."

Another Test of Strength Of Clad Metals

THE high strength of the bond in clad steels is fast being established beyond reasonable doubt. A recent test of this nature is described in the summer edition of the publication of the International Nickel Co., entitled INCO.



Fractured composite test specimen showing break on steel at 55,000 lb. per sq. in. and nickel to steel bond intact. Diagrams show how test specimen was made up

Nickel-clad, inconel-clad, or monel-clad steel plate is produced by placing together plates of the two materials and hot rolling. In making the test a block was cut from regular nickel-clad plate and a test bar was constructed as indicated in the figure on this page. Upon conducting a tension test on the specimen, failure occurred through the main body of the steel rather than through the bond.

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Pipe-Line Activity

Plantation Will Test Pipe Line From Baton Rouge to Greensboro, Dec. 15

Plantation Pipe Line Co. is planning to conduct a fluid test of the main trunk line on December 15, preparatory to putting it in operation. This trunk line consists of approximately 780 miles of 12 and 10-in. pipe extending from Baton Rouge, La., to Greensboro, N. C. Plans call for the completion of laterals by February 1. The company is experiencing some delay in getting the electric centrifugal pumping units which will be installed at all pipe-line stations. The total length of the line, including 8 and 4-in. laterals, will be more than 1,260 miles. According to the schedule, all of the 127,000 tons of pipe required for construction with the exception of 1,200 tons will be provided by December 15. An article on this project was published in The Oil and Gas Journal, October 30, 1941, Page 10.

Lone Star Will Lay Line to Sewell Field

Officials of Lone Star Gas Co. announced last week that the firm had started construction of a 27-mile 12-in. line into the Sewell field of Young County, Texas, and plans for the laying of a 6-in. line into the Pottsville gas area of Hamilton County, Texas.

The line to Sewell will extend north from the firm's compressor station at Brad in Palo Pinto County, Texas, and will have a capacity of 25,000,000 cu. ft. daily. Along its course, the line will cross under the Brazos River at a point immediately below Possum Kingdom Dam. Pipe being used was salvaged from a former line extending from San Angelo to the Big Lake field, Texas.

When the Sewell job is finished crews will start work on the Pottsville line, which will extend 15 miles to a point north of Hamilton to tie in with the company's system.

Stanolind Builds Station on Lateral at Laton, Kans.

Stanolind Pipe Line Co. is constructing a pumping station at Laton, Kans., which is located 15 miles from Bemis, Kans., on the 135-mile 10-in. lateral line which was laid in the middle of 1940, connecting the Bemis area with the company's trunk line at Washington, Kans.

The new station will pump for a distance of 112 miles. It will be equipped with two four-cycle diesel engines, using solid injection, rated at 500 hp. each when operating at 400 r.p.m. The line will be operated normally at 600-lb. pressure, but it will be possible to operate at 1,200-lb. pressure if required. The diesel engines drive two 5½ by 24-in. duplex pumps operating at 58 r.p.m. It is expected that the station will be placed in operation early in February.

ICC Will Hold Pipe Line Rate Hearing, December 18

A hearing will be held to consider the reduction of pipe-line rates and gathering charges, starting at 10 o'clock December 18 by the Interstate Commerce Commission at Washington, D. C. At that time the rates of 34 companies will be reviewed.

Early in the year several pipe lines, led by Gulf and Texas Co. interests, petitioned the commission to reconsider the "show-cause order" of the commission in 1940 asking why rates should not be reduced so as to make a return of 8 per cent on property values. In the meantime the pipe-line situation has changed to a marked extent because of increased cost of materials and because of the additional burdens thrown on pipe lines by increased loads required during the emergency period and the disruption of normal operation due to the removal of tankers making deliveries from the Gulf Coast. This hearing means a reopening of the case, known as Docket 26570, instituted in 1934. The last hearing was held in 1938 when evidence was submitted which led the commission to take the position that rates used in 1933 were too high.

Following reductions made last summer by Shell Pipe Line Co., Texas-Empire Pipe Line Co. reduced rates on crude oil to refineries in the Chicago area from 34½ to 30 cents for Mid-Continent oil and from 20 to 15 cents for Illinois oil. Stanolind Pipe Line Co. made reductions of approximately 20 per cent, effective November 14. Humble Pipe Line Co. reduced rates 2½ cents, representing a 16 per cent reduction, effective December 1. Atlantic Pipe Line Co. is making reductions effective December 5 to meet some of the reduction made by Shell Pipe Line Co. last summer.

Outlets for Tinsley Field Are Being Considered

Two weeks ago reports were that two pipe-line projects were in the making for the Tinsley field, both projected from the field to Vicksburg on the Mississippi River. During the past week the Mississippi Pipe Line Co., chartered for this purpose, has indicated that instead of or in conjunction with the pipe line, it will build a 40-car loading rack in the field for shipment of oil by rail from the field. The rack will be in 17-10n-2w, between Anding and Tinsley, on the Y. & M. W. railroad. It will be a double rack, 20 cars on each side, and will load and ship 80 cars daily. Commitments have already been received from a few wells in the field.

Major companies are studying the possibilities for laying pipe lines from the Tinsley area. Sohio Oil Corp. has announced that right-of-way is being acquired for a proposed line from the field to Memphis, Tenn., where oil will be loaded on barges for shipment to Latonia, Ky. Standard Oil of New Jersey interests are now shipping 12,000 bbl. daily by tank car to Baton Rouge, La.

Approximately 25,000 bbl. daily is now moving by tank car and barges from Tinsley to refineries in Illinois, Kentucky, and Indiana.

Foreign Efforts to Control Pipe Line Will Be Probed

Representative Dondero, Michigan Republican, has requested the House judiciary committee to investigate reports that foreign interests sought control of public utilities in the United States.

He wrote Chairman Hatton Summers, Texas Democrat, that his request was based on recent statements made by Representative Voorhis, California Democrat.

"A week ago," said Dondero in a statement placed in the Congressional Record, "Mr. Voorhis brought to the House's attention a report that alien utility interests may be seeking control of the only natural-gas pipe line connecting the East

and the Middle West to the prolific gas fields of the Southwest.

"He referred to the foreign group as 'Sofina' and to the pipe-line system as the 'Panhandle Eastern.'

"It occurs to me that we might well dispense with rumors and reach for the facts of this Sofina case more effectively if the judiciary committee will subpoena Sofina's agents in this country to appear before the committee."

Mr. Dondero said that Mr. Voorhis cited efforts of "Sofina" with "subsidiaries in lands under Nazi domination to acquire control of one of the most strategic natural-gas pipe lines in America, namely the Panhandle Eastern, which originates in the Texas Panhandle and crosses Oklahoma, Missouri, Illinois, Indiana, and Ohio, terminating in Michigan.

Tank-Car Shipments Are Reported

Before the drastic curtailment of tank-car shipments at the beginning of December, the following release was issued by the petroleum coordinator:

"Railroad movement of petroleum and petroleum products into the Atlantic seaboard territory totaled 3,756 cars during the week ended November 15, the 13 companies using this method of transportation reported today to the Office of Petroleum Coordinator for National Defense.

"This represents an average daily movement of 536 cars, compared with a daily average for the preceding week of 562 cars. In terms of oil and its products, assuming an average load of 225 bbl. per car. daily deliveries during the week ended November 15 amounted to 120,600 bbl. For the week ended November 8 the average was 126,450 bbl.

"Shipments by companies for the week of November 15 were: Atlantic Refining Co., 403 cars; Cities Service Oil Co., 271; Gulf Oil Co., 223; Pan American, 292; Pure Oil Co., 67; Shell Oil Co., 281; Sinclair Refining Co., 459; Socony-Vacuum Oil Co., 107; Standard Oil of Kentucky, 56; Standard Oil of New Jersey, 1,216; Sun Oil Co., 3; Texas Co., 172; Tide Water Associated Oil Co., 196."

It is reported that tank-car shipments of crude from Martinsville and Bentonville, Ill., have declined from 58,000 bbl. daily in the middle of October to 20,000 bbl. November 15. Schedules call for discontinuing tank-car shipments of crude oil from these points entirely by the first of the year. This is a result of return of tankers from British service and of recent decline of Illinois production.

Panhandle Eastern Prepares To Supply Flint, Mich.

Natural gas for Flint, Mich., within 5 or 6 weeks was predicted this week by a spokesman for Panhandle Eastern Pipeline Co., which is beginning construction of a 42-mile pipe line from Saginaw. The representative, J. W. Hall, said sufficient materials have been obtained and the project can be completed without delay. Consumers Power Co., which will distribute the natural gas, said they are ready for a changeover from artificial gas soon after January 1. The new supply for Flint will be a mixture of about 30 per cent Michigan gas, 70 per cent from Texas.

Western-Bell Completes Line to Fargo Pool

The 40-mile 4-in. pipe line of Western-Bell Corp., subsidiary of Bell Oil & Gas Co., has recently been completed and put in operation between the Fargo pool, Texas, and the Bell refinery at Grandfield, Okla. Oil is moved through the line from a pump station in the Fargo pool which is equipped with a 110-hp. diesel engine driving a duplex pump and a small electric centrifugal pumping unit. At the present time, shipments are made through the line at the rate of 2,500 bbl. per day. The capacity of the line is between 4,000 and 5,000 bbl.; this might be further increased by the addition of pumping stations. The line, including the crossing at the Red River, was contracted by John E. McAfee.

Pipe-Line Personalities . . . . . Ben W. Winters

BEN W. WINTERS, vice president and general manager, Southeastern Pipe Line Co., Atlanta, Ga., was born at Columbus, Ohio. After finishing high school in that city, he attended Ohio State University, graduating with the class of 1917. He then went to an officers training camp and was commissioned a second lieutenant in the Field Artillery. After the first World War, he entered the oil business as a member of a geological crew in Oklahoma. He later went to Texas and participated in the Burkburnett boom. He then entered the services of the Navy Department in the construction and operation of the United States helium-production plant located at Fort Worth, Tex. In 1924 he was employed by Pure Oil Co., when its headquarters were located at Columbus, Ohio. He worked with this company as an office engineer and then field engineer on all types of construction including filling stations, terminals refineries and pipe lines.

In 1932 he was placed in charge of the construction of the Detroit Southern gasoline pipe line running from Toledo, Ohio, to Detroit, Mich. After the line was completed, he was placed in charge of its operation and remained in this position until 1938 when he was elected to the position of vice president and general manager of the Southeastern Pipe Line Co. where he supervised the construction of this line, and also has charge of its operation. In 1919 he was married to Mary Louise King at Fort Worth, and now resides in Atlanta with his wife and daughter, Constance. A second daughter, Joan, is attending college at Indiana University.

Northern Pipe Line Makes Record Deliveries

Declaration of a 90-cent dividend by Northern Pipe Line Co. is indicative of the demands made upon the facilities of the eastern pipe lines. The company has been handling more than 1,000,000 bbl. of crude per month since June. It reached a peak of 1,234,000 bbl. in September to make the total for the first 9 months 9,384,000 bbl. For all of 1940 deliveries were 7,946,000 bbl. Deliveries made this year exceed those of the company for any year since 1929.

In declaring a semiannual payment of 90 cents on each of the 120,000 shares of $10 par value stock outstanding, the company said the dividend is being paid out of current earnings. In June the payment was 50 cents, to make a total of $1.40 a share for 1941. Last year a total of 80 cents was paid. On a basis of par value of the shares, the 1941 dividends will be the highest since 1923 and that year included a substantial extra paid out of earnings accumulations.

The other eastern pipe-line companies are all experiencing greater deliveries this year, but none as yet has made any important revision in dividend rates.

It is recognized that the great demand for the facilities of the eastern pipe lines stems from the oil emergency in the Atlantic Coast region which was caused by the diversion of tankers.

United Gas Pipe Line Co. Completes Largest "Shove"

SHREVEPORT, La., Dec. 1.—Another record has been hung up during the construction of United Gas Pipe Line Co.'s gas line from the Lirette field of southern Louisiana to Mobile, Ala. The first record was made last July in the laying of three 10-in. lines across the Mississippi River in 7 days. Another record was accomplished when the firm completed, as a part of the same pipe-line project, a 24½-mile marine line across Lake Pontchartrain in coastal Louisiana. The third record for this job was the successful completion of a 5.32-mile section of pipe line, all "shoved" through a ditch from one point.

September 15, 12 miles northwest of New Orleans and just off the edge of the Airline Highway, a single tractor made the first run up a ramp and shoved the first length of 16-in. pipe up a ditch which had been dug from that spot to the banks of Lake Pontchartrain, 5.32 miles away.

Thirteen days later the same tractor lifted the last length of pipe and made the last run forward on the ramp and 28,082.75 ft. away the capped end of the huge 16-in. pipe came dead against the target on the lake shore. Although the pipe weighed approximately 92 lb. per linear foot, including the Somastic coating, the buoyance factor of the water in the ditch decreased this weight to 20 lb. per ft., making the total weight of the last shove about 281 tons.

The facts on the shove are more easily comprehended than the difficulties of actually accomplishing the feat. First, there was an almost impenetrable forest of brush and trees, and semi-solid footing was usually found about waist deep in the ditch. Surveys preliminary to the actual work were conducted by boat when possible, but mostly on foot through the swamp. Once the right-of-way was cleared the going was less difficult, but the ramps had to be constructed for heavy equipment, thus much foundation work was necessary. The drag line which did most of the ditching worked from mats laid down as foundation. The ditch had to be "crumbed out" by hand since the land was too soft to support a ditcher.

A bridge was built across the narrow ditch which runs alongside the Airline Highway at this point, in order that trucks and equipment could reach the work site on the other side. This was a large task, since the ditch is approximately 100 ft. wide, 23 ft. deep and filled with water.

In making the actual shove, pipe was welded alongside the ditch, four 50-ft. lengths at a time. The coating was put over the welds and the tractor picked up the end of pipe and shoved it on down to the end of the ramp. This procedure was followed from start to finish. Included in the line was a great reverse "S" curve necessitated by the underpass at the Illinois Central Railroad tracks, 3 miles from the starting point of the push.

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Neither can you tell from looking at Wickwire Rope how much more service it gives than usual high grade wire ropes. Use alone will prove it.

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While Wickwire Rope is premium quality, its price-per-foot is no more than other recognized brands.

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FIELD DEVELOPMENTS...

HIGHLIGHTS FROM THE WEEK'S NEWS—

Completions continue just under the 600-well level and at a rate about 15 per cent higher than last year. During the past week total completions were off 7 while oil-well completions were up 15. Gas wells were down 8 and dry holes down 14.

New pools discovered or in prospect as a result of last week's drilling were in general of a routine character. So far as the number of discoveries is concerned, 1941 has been a very successful year and some of the discoveries give promise of opening extensive plays. One of these is in the news again. After reporting rather disappointing developments for some weeks, Raisin City in the San Joaquin Valley came through with two new sands which were not considered worth reporting in the discovery well and which definitely indicate the direction of further development in the field. The discovery of Yegua sand in the Government Wells field will cause a revival of drilling along the whole trend in which the field is situated.

Hardly of major importance but indicating that the little fellow can still operate is the report of three sands in the Woodbine showing oil at around 400 ft. The operators are going to lower pays which are found at 7,000 ft. or more in Arkansas and the Texas border counties but which they expect to find above 1,000 ft. In this day of deeper drilling a Woodbine play above 500 ft. would be a novelty.

ILLINOIS: A new McClosky lime pool has been opened in Jasper County. One Clay County wildcat appears likely to open a McClosky pool and another is testing showings in the Aux Vases and Benoist. A Benoist pool in Fayette, an Aux Vases-Levias pool in White and a McClosky pool in Wayne County are in prospect (p. 62).

WYOMING: The demand for black oil has increased operations in several fields including Oregon basin which reports the two largest completions of the week (p. 81).

NORTH LOUISIANA: A wildcat flowing oil from the Wilcox in eastern Catahoula Parish has carried the play within 20 miles of the Mississippi River (p. 68).

ARKANSAS: A new sand 1 mile from the Smart field reports saturation (p. 69).

MICHIGAN: The biggest well in the Roscommon district is reported. A good Reed City producer was completed offsetting a dry hole and may open up a large new area (p. 84).

CANADA: The Vermilion field in the northern sector has been extended 3 miles (p. 84).

KANSAS: Extensions in the Kraft-Prusa and Krier areas are linking them into a field of major importance. Two Viola shows in Reno County may extend the Peace Creek play to the northeast (p. 61).

WEST CENTRAL TEXAS: A new gas area in Stephens County is producing from the Marble Falls lime. A shallower sand, probably correlating with the Norris of Anzac-Norris, is showing oil in the Jim Ned pool, Coleman County (p. 65).

OKLAHOMA: The second Wilcox is productive at Tecumseh Lake, making the second pay zone for the pool (p. 75).

WEST TEXAS: Possible Ordovician production was extended far to the east in Pecos County as a wildcat between Girvin and the Taylor-Link field sprayed oil from an Ellenburger section which logged 100 ft. thick. In the Sand Hills-Abell sector development continues. The northern basin play is showing plenty of indications although no large discoveries have been made to date. The latest county to receive its first important showing is Crosby County to the east of Lubbock and north of Garza counties (p. 70).

LOUISIANA GULF COAST: The second well in the Delacroix Island gas-distillate area found the pay about 50 ft. below the discovery well and has made a good oil well. Erath has been extended west and a test of a deep sand at Edgerly will determine whether or not this old dome will join the growing list of revived 40-year-old pools (p. 78).

SOUTHWEST TEXAS: A new trend play may result from the finding of Yegua sand production in Government Wells. A new Frio-Vicksburg showing is reported southeast of Orange Grove. Campana and Yturria have been extended and a gas discovery is reported in Dimmit County (p. 85).

CALIFORNIA: Possibilities of the Raisin City area were increased by the discovery of two new pay zones below the regular pay to the northwest of the discovery (p. 67).

TEXAS GULF COAST: The Wilcox trend play remains active with wells testing in the Fostoria and Lissie areas and four rigs running in Lake Creek. Another deep sand has been picked up at Hull. North La Ward and Conroe are both extended (p. 80).

OHIO: A new Clinton gas pool has been opened up in Summit County (p. 79).

NORTH TEXAS: Shallow production, believed to be from the Gunsight lime, is reported on the southwest edge of K.M.A. (p. 65).

EAST TEXAS: A shallow well in Ellis County west of the Mexia fault-line zone reports shows of the Woodbine topped at 150 ft. The oil was in three separate shows about 350 ft. in the sand (p. 74).

COMPLETIONS IN ALL FIELDS . . .

(Week Ended November 29, 1941)

	Oil	Gas	Dry	Total	1941 total comp. to date	1940 total comp. to date
N. Y., Pa., and W. Va.	94	17	2	113	5,465	5,101
Ohio	9	8	9	26	1,558	1,391
Indiana	2	2	2	6	467	418
Kentucky	4	1	3	8	614	550
Illinois	54	1	11	66	3,352	3,506
Michigan	14	5	4	23	843	1,046
Kansas	26	1	14	41	1,976	1,691
Nebraska	0	0	0	0	76	40
Missouri, Iowa	0	0	1	1	34	36
Oklahoma	25	3	8	36	1,721	1,723
Texas:						
North Central Texas	32	0	19	51	2,515	2,571
West Texas	45	0	9	54	2,096	1,728
Texas Panhandle	17	2	0	19	636	512
Eastern Texas	4	2	3	9	953	571
Texas Gulf Coast	8	0	6	14	986	1,086
Southwest Texas	22	1	8	31	1,716	1,928
Total Texas	128	5	45	178	8,902	8,396
North Louisiana	11	1	3	15	715	610
Louisiana Gulf Coast	10	1	1	12	791	942
Total Louisiana	21	2	4	27	1,506	1,552
Arkansas	1	1	3	5	185	156
Mississippi and Southeast	8	0	1	9	260	186
Montana	4	0	1	5	270	224
Wyoming	3	0	1	4	165	154
Colorado	0	0	1	1	30	17
New Mexico	6	0	1	7	257	566
California	26	0	4	30	1,036	937
Total United States	425	46	115	586	28,717	27,584
Total previous week	410	54	129	593		
Week ended Nov. 30, 1940	328	65	115	508		

Special Articles

In addition to covering the field news of the week, section contains short articles on areas of current interest. These include the North La Ward field, Jackson County, Texas, a recent discovery which was formerly considered a possible link between Maurbro and Lolita (p. 60).

The District 2 office of OPC has approved a plan for wide spacing and multiple-pay completions in a newly discovered area in Illinois (p. 60).

After getting off to a good start, mining operations in the tar sands of the Athabaska River in northern Alberta have been delayed by a fire (p. 60).

Water encroachment has become a serious problem at Tinsley (p. 86).

The old Bellevue shallow field in northern Louisiana is still active although it is entering its fourth decade and is in the small stripper stage (p. 74).

New Texas Gulf Coast Field Proven Over Large Area

By F. L. SINGLETON

EVEN with extensive geological, geophysical, and engineering data available to the oil industry today, the actual productive area of a new field can never be accurately told until much of it has been tested by wells. This usually takes months. Sometimes it is years before a field has been fully tested. Last week, because of rapid development and drilling of outside tests, one of 1941's Texas Gulf Coast discoveries was pretty well defined—at least as to area. Deep zones had yet to be probed.

It was the North La Ward field on the western end of the upper Texas Gulf Coast district in Jackson County, roughly 2 miles from the Maurbro field to the east, the Lolita field to the southwest, and the town of La Ward to the south. Early hopes that production might be linked with Maurbro and Lolita were discouraged by developments two weeks ago (The Oil and Gas Journal, November 27, p. 87), but the field still shaped up as a major strike with production proven for more than 1,500 acres and last week a ¾-mile northwest extension was expected, the latest in a series of outpost successes (see p. 80)

Opened October 29 by Moore & Ahern 1 A. Burdett in the I.&G.N. Survey 3, the field was soon extended 1½ miles southwest by completion of Christi & Dunnam 1 J. E. Pickering in Section 25, P. S. Scott Survey, which ran about normal as to geologic tops. Then Moore & Ahern moved out nearly another mile southwest from the 1 Pickering and drilled 1 Bodet which also made a producer. This well, completed last week, was small, however, and was near the water level. Salt water was recovered on a drill-stem test at 5,217-26 ft. and 5,227-36 ft.

Nearness of the water level and size of production at the 1 Bodet, coupled with similar performance of a well to the south of 1 Pickering—Gulfboard Oil Co. and Salt Dome Oil Corp. 1 Dickey—pretty well defined the field to the south and southwest and removed the likelihood that it would join with Lolita.

At the same time, northeast limits of the field and a separation from Maurbro were established by the abandonment of Edwin M. Jones 1 Olsovsky, located 4,200 ft. from production.

To the east, production was defined by two wells. One of them, drilled ¾ mile east of the discovery by H. E. Williams, was a dry hole at 6,500 ft. The other, Moore & Ahern 2 Burdette, 1,200 ft. due east of the discovery, was completed for a producer but checked structurally low.

Thus, in little more than a month after the discovery well was completed, extent of the field was fairly well defined on all sides. The 1,500 acres proven allow for drilling some 75 wells on the present 20-acre spacing program without consideration of the possibilities for deeper production. Initial production from the discovery well was 122 bbl. of 24.8-gravity oil per day through a ⅛-in. choke. Tubing pressure was 600 lb. and casing pressure 660 lb. Except for the small edge wells already mentioned, other wells in the field have similar initials. Usual gas-oil ratio is between 294:1 and 350:1.

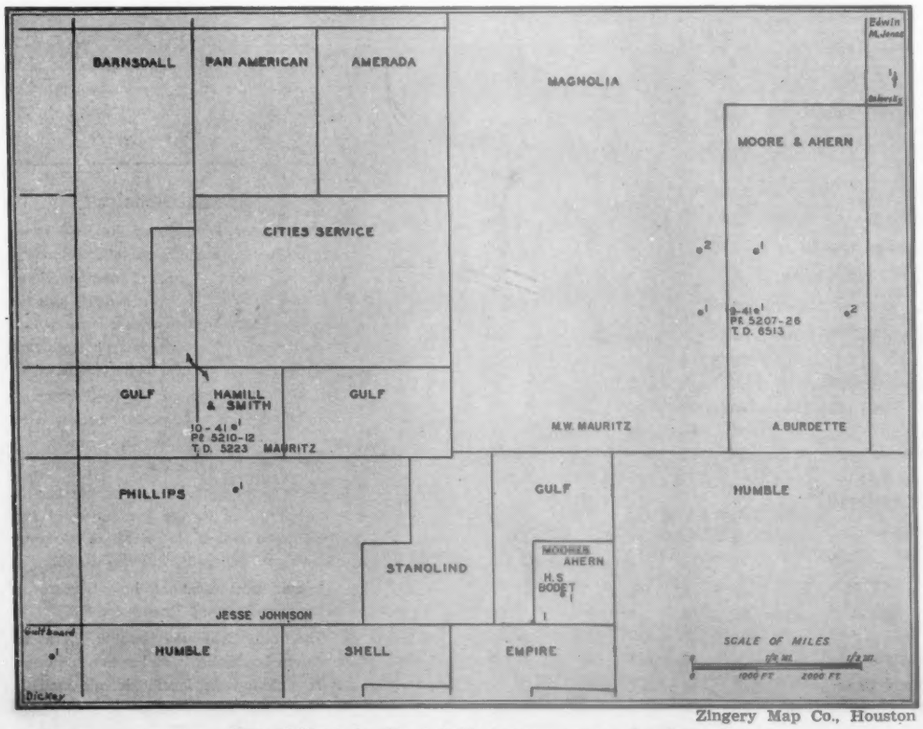
The field appears to be on an elongated dome with an east-west axis, and is similar in many respects to neighboring Maurbro and Lolita. Like other recent discoveries in the immediate vicinity (except Maurbro), production comes from the Marginulina sand. The gas-oil contact has been tentatively established at 5,204 ft.

The pay section is about 45 ft. thick and is overlapped by a gas cap at 5,148 ft., about 56 ft. above the pay. From development thus far, there is indication of faulting just south of the Pickering well. The section becomes more broken and cement squeeze jobs to insure good completions are expected to become common practice in this part of the field. Indicative of what might be expected was the Gulfboard well on the south edge where considerable trouble was experienced in shutting off the gas which channeled down from sand at 5,187 ft. Casing was cemented on the bottom in this well and it will probably be completed for a high gas-oil ratio producer at 5,216-19 ft.

Since the Frio sand, below the Marginulina, produces in most of the nearby fields, there is good reason to believe it will also produce at North La Ward. The discovery well, which drilled into the Frio, failed to log any encouraging shows, but Moore & Ahern were reported last week to be starting a 6,700-ft. test on the Bodet lease in the extreme southern part of the field. Other operators are also expected to drill to the Frio as development progresses.

Fifteen companies and independent operators hold leases on the proven acreage. Largest block is held by Magnolia Petroleum Co. which has three of the seven active operations. Cities Service Oil Co., Gulf Oil Corp., and Shell Oil Co., Inc., also have acreage and are expected to start operations soon.

Wells are not hard to drill and are not expensive. They are being completed in 15 to 20 days with steam rotary rigs at a cost of from $20.000 to $25,000. Usual casing program calls for about 1,200 ft. of 10¾-in. surface pipe set with 750 sacks of cement, and a 5½-in. flow string on bottom. Completion is accomplished by gun perforating. Twenty-acre spacing has been adopted and proration is based 75 per cent on acreage and 25 per cent on potential.



Zingery Map Co., Houston

Map of North La Ward field showing present development

Multiple-Pay Completion on 20-Acre Spacing Approved in Illinois

CHICAGO, Ill., Dec. 1.—One of the most outspoken supporters of conservation in the Illinois oil fields William "Billy" Bell of Bell Brothers at Robinson, Ill., last week had apparently succeeded in inaugurating a new controlled drilling program for at least one Illinois field. Mr. Bell's plan for drilling one well on 20-acre spacing to produce oil from a sand and a lime zone was proposed as a measure to save steel under national-defense demands.

However, it was not the first time he had vigorously sponsored conservative drilling practices for the state. One of the old-time Illinois operators, he took the lead in urging regulated drilling when the Illinois basin play got under way in 1937. He helped draft a conservation bill which was defeated in the state legislature, and as a former president of the Illinois-Indiana Producers Association, rallied independent operators in support of conservation. He had also represented his state on the Interstate Oil Compact Commission.

His new plan, announced by Wirt Franklin, director in charge of District 2 of the Office of Petroleum Coordinator, was proposed for the development of a new pool opened by Bell Brothers in 33-1s-6e, Wayne County, near Pinoak. Under it, wells will be drilled to the McClosky lime on a 20-acre spacing program. Where both the Aux Vases sand and the McClosky lime are productive at one location, operators will set their casing through the upper Aux Vases sand, produce from the McClosky and later perforate the casing opposite the Aux Vases. No well will be drilled for the present to produce only the McClosky which is usually developed on 10-acre spacing. A similar program was adopted the previous week at the Reed City pool in Michigan (The Oil and Gas Journal, November 20, 1941, p. 32).

Said Mr. Franklin: "The plan adopted by Bell Brothers saves the drilling, for the present, of four wells to each 40 acres which is a real contribution to the national-defense program because of the limited amount of steel products which may be allocated to the oil industry for development purposes. The plan adopted need not necessarily be a permanent one, but it is excellent for the purpose of outlining the productive limits of the new pool.

"When the pool is outlined, full information as to the porosity, permeability, productivity of the producing formations will be available, based on which may be determined the number of wells necessary to obtain the greatest ultimate production from the reservoir with the minimum use of material, equipment, and supplies. At a later date, the operators may then drill additional wells in the new pool if the same are justified when the emergency is past and steel for that purpose is available."

The usual practice in Illinois has been to drill one well to each 20 acres in the McClosky lime and one well to each 10 acres in the Aux Vases sand where both are productive in the same field.

Alberta Oil Mining, Near Success, Delayed by Fire

THE world's largest known crude-oil reserve—some 100 billion barrels in the Athabaska tar sands of East Central Alberta, near McMurray, Canada — has long been known to the oil industry but has never been included in estimates of known recoverable oil. Reason: the deposit is under no pressure, must be mined rather than produced from wells and cost of separating the oil from mined sand to date has prevented any important exploitation.

Unlike the much-publicized oil-shale deposits of Colorado and Utah, however, the Athabaska tar sands have not been unanimously set aside as little more than an interesting geological study. Their estimated content of some 13,000 bbl. of oil to the acre is too much to be completely ignored, and oil mining has come so close to being a commercially profitable process that large-scale production has been just around the corner for several years. As the sands outcrop in the steep river bank, no shafts were required.

Last year it looked as though the war and years of study and experiment had combined to push the tar sands into the world oil-production picture. Into continuous production went a small plant near McMurray which, from May 19 to September 30, mined 18,852 tons of sand and recovered 16,928 bbl. of crude oil, 1,069 bbl. of gasoline and 3,479 bbl. of diesel and burn-

(Continued on Page 73)

Kraft-Prusa and Krier Are Combining Into Major Area

By ROBERT INGRAM

A REVIEW of major developments in pools along the Barton arch or Central Kansas uplift made last week in Wichita emphasized the growth of the Kraft-Prusa and Krier district into a large producing area. It was estimated that the combined area, covering more than 10,080 acres, had a reserve of 75,000,000 bbl., calculated on an estimated ultimate recovery of 7,500 bbl. to the acre. Producing horizons include the Gorham sand, the Arbuckle dolomite, several zones in the Lansing-Kansas City lime series and the Shawnee series of the Pennsylvanian system. Production from the area averaged 5,336 bbl. a day during October and producing wells totaled 171.

Growth of the area has been slow and not particularly spectacular. It was opened in December 1936 at the Kraft pool. Krier and Prusa were opened in succeeding years and gradually the three pools have been spread out, new zones opened and development extended until they appeared last week as a large single area. They now extend for some 8 miles in Townships 16-11w and 17-11w.

Latest extension was J. J. Lynn and W. W. Drilling Co. 1 Kraft, S½ SE NW 36-16-11w, which cored some saturation in the Arbuckle dolomite topped at 3,348 ft. and drilled to 3,370 ft. where pipe was set at week's end for completion. At the same time Phil-Han Oil Co. et al 1 V. Grosshardt, NE SE 17-17-11w, were drilling below 1,000 ft. in an effort to extend the area 1 mile to the south.

AVERAGE DAILY PRODUCTION

LEADING KANSAS FIELDS

	Nov. 29	Nov. 22
Augusta	1,200	1,250
Bemis-Shutts	11,700	11,650
Bloomer	6,550	6,450
Burnett	10,850	11,300
Burrton	7,150	7,200
Chase	6,100	6,400
Elbing	900	900
El Dorado-Towanda	7,150	7,100
Geneseo	6,650	7,200
Graber	2,250	2,000
Greenwood County	9,000	9,100
Hollow-Nikkel	1,450	1,500
Keesling-Midway	1,150	1,100
Lerado	700	550
Lorraine	1,200	1,150
Oxford	450	550
Rainbow Bend	900	950
Raymond	1,450	2,100
Ritz-Canton	3,750	3,800
Trapp	21,400	21,300
Balance Russell County	27,050	26,950
Sedgwick County	3,050	3,100
Silica	21,800	22,350
Voshell	1,650	1,600
Wellington	800	850
Wherry	2,400	2,350
Zenith	12,100	11,900
Others	78,400	81,600
Total Kansas	249,200	254,250

Two Wells Northeast of Peace Creek Get Viola Lime Shows

Oil shows at two tests gave promise Wednesday of opening new production in western Reno County or extending the Peace Creek pool 3½ miles to the northeast. Central Petroleum 1 Hendrickson, 3½ miles northeast of the Peace Creek pool, NW NE 2-23-10w, was setting casing to test a show of oil found in Viola lime at 3,714-17 ft. A mile and a half northeast of the Peace Creek pool, Leader Oil 1 Tonn, SW SW 11-23-10w, found traces of oil in the Viola below 3,757 ft. and set pipe.

New Producer Opened in Sumner County; Simpson Strikes Testing

Sumner County had a new producer 1¾ miles west of the North Vernon pool and 2 miles southwest of the Padgett pool. The test, E. B. Shawver 1 Kemp, SE SE 8-35-2e, was showing for a small producer from the chat where free oil was found from 3,383-93 ft. The test was drilled to a total depth of 3,416 ft.

In Barber County, Pryor & Lockhart 2 Gant-C flowed 100 bbl. of oil in 45 minutes after running swab with hole full of oil from the Simpson sand but then ceased flowing and operators, at last reports, again were cleaning out. The hole was shot after being drilled to a total depth of 4,545 ft. The Gant offsets the pool discovery well, an Arbuckle dolomite producer, and is in the N½ NE 18-31-13w.

A Pawnee County test, Skelly Oil Co. 1 Yeager, W½ SW SW 32-22-15w, was showing for 60 bbl. of water in 4 hours after perforating in the Simpson from 3,978 to 3,988 ft. The test is 7½ miles northwest of the Macksville pool of Stafford County. Operators at last reports were continuing the test.

Drilling for Hugoton Gas To Be Increased Soon

Although the Hugoton gas field of far southwestern Kansas and the Oklahoma Panhandle is one of the world's largest known reserves of natural gas, development there has been unspectacular and had almost stopped during 1941. Since January 1, only four new wells have been drilled in the field. Twelve wells have been reconditioned.

Chief reason for the lack of development has been the lack of outlets and markets. The big Amarillo gas fields to the south captured the lion's share of potential markets before Hugoton got started, and many a legal and financial tangle kept proposed pipe-line projects to the Chicago-Minneapolis-Detroit area tied up for years. With production thus severely limited, landowners on the 117,073 proven acres (estimated total productive area is 1,380,000 acres) have been jealous of their rights and have protested the drilling of many a well on the grounds it would drain the reservoir.

Last week two developments foreshadowed a big increase in activity at Hugoton. Announcement was made for Glenn M. Dunne of Wichita, Kans., and C. W. Hoffman, Eastland, Tex., who were granted a permit to construct a carbon-black plant at Hugoton that 20 wells would be purchased in the field soon and at Guymon, Okla., Paul Beach, superintendent at Liberal, Kans., for the Panhandle Eastern Pipe Line Co., said at least 20 new wells would be drilled in Texas County, Oklahoma, in 1942.

Three hundred and twenty-six gas wells have been drilled in the Hugoton area since 1922—292 in Kansas and 34 in Oklahoma. The most recent open flow tests showed that the total open flow of the wells in Kansas was approximately 2,600,000,000 cu. ft. a day. The initial rock pressure on these wells varied from 432-440 lb. per sq. in. and the present rock pressure average of the Kansas wells is 413 lb. In the last 4 years, 164 wells have been acidized, thereby increasing their average open flow from 4,700,000 cu. ft. to 13,800,000 cu. ft., an average increase of about 195 per cent.

Production comes from Permian formations at an average depth of 2,650 ft.

Wells in the field are usually drilled to a depth of 500-600 ft. before the surface pipe is set and the size of the hole reduced. The only consideration of importance to the operator is to get to a depth safely within the Red Beds so that surface water is completely shut off.

KANSAS COMPLETIONS

Wildcats

Russell County: Phillips 1 Frederick, NE NE SW 9-15-14w, dry, T.D. 3,314 ft., anhydrite 835 ft., Ft. Riley 1,790 ft., Topeka 2,730 ft., Lansing 3,028 ft., Arbuckle 3,292 ft.

Barton County: Continental 1 Eveleigh, SE SE NW 11-18-13w, dry, T.D. 3,376 ft., Lansing 3,068 ft., conglomerate 3,324 ft., Arbuckle 3,351 ft.

Edwards County: Stanolind 1 Arensman-A, S½ NE SE 23-25-19w, dry, T.D. 5,166 ft., anhydrite 1,285 ft., Lansing 4,100 ft., Viola 4,772 ft., Simpson 4,997 ft., Arbuckle 5,065 ft.

Sumner County: Central Petroleum et al 1 Stewart, S½ SE NW 22-31-3w, dry, T.D. 4,536 ft., Ft. Riley 890 ft., Topeka 2,290 ft., Kansas City 3,293 ft., Mississippi 3,966 ft., Wilcox 4,390 ft., Arbuckle 4,504 ft.

Nemaha County: Bumpus & Hibbard 1 Achten, S½ SE NW 12-4-14e, dry, T.D. 3,130 ft., Bartlesville zone 1,776-1,810 ft., Mississippi 2,553 ft., Hunton 2,958 ft.

Fields

Northwest Ainsworth, Barton County: Continental 1 Redetzke-A, SE SE NE 29-16-13w, pumped 271 bbl., Arbuckle 3,381 ft., 6-in. 3,382 ft., acid, T.D. 3,392 ft.

Beaver, Barton County: Gulf 1 Lambert, NE NW NE 17-16-12w, flowed 2,850 bbl. oil and 150 bbl. water, Topeka 2,866 ft., 8⅝-in. 2,866 ft., acid, T.D. 2,885 ft.

Beaumont, Greenwood County: K. T. Weideman 11 Lewis-A, NE SW SW 25-27-8e, gaged 440,000 cu. ft. gas, Kansas City 1,688-1,740 ft., 8-in. 1,653 ft., T.D. 1,740 ft.

K. T. Weideman 6 Lewis-A, NE NE SW 25-27-8e, old well, old T.D. 2,551 ft. in Mississippi, T.D. oil and 100 bbl. water.

2,761 ft., Wilcox 2,755½-57 ft., pumped 45 bbl.

Bedford, Stafford County: Cities Service 2 Knoche, NW NE SE 28-23-12w, pumped 3,000 bbl., Arbuckle 3,829 ft., 5-in. 3,830 ft., T.D. 3,840 ft.

Bemis, Ellis County: Sinclair Prairie 3 Slimmer, NW SW SW 19-11-16w, pumped 3,000 bbl., Arbuckle 3,342-48 ft., acid and shot, 5-in. 3,400½ ft., T.D. 3,400½ ft.

South Big Creek, Russell County: Cummings & Aladdin 1 Billings, W½ SW SE 31-14-14w, pumped 356 bbl. oil and 8 bbl. water, Arbuckle 3,167 ft., 6-in. 2,918 ft., acid, T.D. 3,174 ft.

Coralena, Russell County: Carter 15 Detrich, SW SW SE 8-15-13w, pumped 1,075 bbl., Lansing 2,920 ft., 5½-in. 2,931 ft., acid, T.D. 2,977 ft.

Frog Hollow, Cowley County: Leader-Zephyr Drilling 1 Elliott, SE NE SE 17-32-5e, pumped and flowed 522 bbl., Bartlesville 3,032 ft., 5-in. 3,030 ft., shot, T.D. 3,048 ft.

Geneseo, Rice County: I. W. Murfin 1 Wright, E½ NE NW 7-19-7w, dry, T.D. 3,458 ft., Simpson 3,420 ft.

Continental 4 Gray, NW SW SW 19-18-7w, pumped 3,000 bbl., Arbuckle 3,101 ft., 6-in. 3,102 ft., acid, T.D. 3,171 ft.

Gibson, Cowley County: Sinclair Prairie 2 Shurtz, NE NW NE 29-34-3e, pumped 297 bbl., Bartlesville 3,363 ft., 7-in. 3,351 ft., T.D. 3,395 ft.

Gorham, Russell County: Polcyn 2 fee, SE SW SE 10-14-15w, old well, old T.D. 3,059 ft., Lansing 3,050 ft., T.D. 3,269 ft., Gorham sand 3,268 ft., pumped 3,000 bbl.

Transwestern Oil 6 K. Polcyn, S½ SW NW 14-14-15w, pumped 1,520 bbl., sand 3,207½ ft., Arbuckle 3,207 ft., 5-in. 3,207½ ft., T.D. 3,211½ ft.

Greenvale, Russell County: Jones & Shelburne 6 Kuhnle, SW NW SW 4-15-12w, pumped 2,280 bbl. oil and 720 bbl. water, Lansing 3,007-11 ft., 5-in. 3,026 ft., acid, T.D. 3,235 ft.

Keesling, Rice County: Derby Oil and Lario Oil & Gas 1 McGlynn, E½ SE NW 21-20-9w, old well, old T.D. 3,290½ ft., T.D. 3,298 ft., dry.

Kraft-Prusa, Barton County: Skelly 3 Disque, S½ SE NE 9-17-11w, dry, T.D. 3,360 ft., Arbuckle 3,347 ft.

Laton, Rooks County: Adam Klink 1 Church lot, SW SW SW 11-9-16w, pumped 116 bbl., Lansing 3,250-56 ft., 5-in. 3,242 ft., acid, T.D. 3,298 ft.

Lost Springs, Marion County: Veeder Supply et al 2 Jones, S½ NE NW 26-17-4e, pumped 353 bbl., Mississippi 2,346 ft., 5-in. 2,346 ft., T.D. 2,392 ft.

McLouth, Jefferson County: Whitten 1 Meyer, NE NE 12-10-19e, dry, T.D. 1,620 ft., Mississippi 1,616 ft.

Hatcher & Fisk 1 C. Kimmel, NE NW 5-10-20e, gaged 5,000,000 cu. ft. gas, Bartlesville 1,496 ft., 6-in. 1,496 ft., T.D. 1,526 ft.

Moore, Butler County: Wilson Oil 5 Wilson, W½ NW NW 12-25-3e, pumped 150 bbl., Mississippi 2,663 ft., acid, 6-in. 2,663 ft., T.D. 2,678 ft.

Pawnee Rock, Pawnee County: Derby Oil 1 Bixby, S½ SW NW 24-20-16w, pumped 50 bbl., Arbuckle 3,788-3,812 ft., 4-in. 3,803 ft., acid, T.D. 3,817 ft.

Peace Creek, Reno County: Cities Service 1 Kreie-D, NE NE SW 21-23-10w, flowed 3,000 bbl., Viola 3,753 ft., 5-in. 3,754 ft., acid, T.D. 3,767 ft.

Cities Service 2 Kreie-C, SW NE SE 21-23-10w, flowed 3,000 bbl., Viola 3,771 ft., 7-in. 3,772 ft., acid, T.D. 3,779 ft.

Republic Natural Gas 4 Snowbarger, SW NW NE 21-23-10w, dry, T.D. 3,779 ft., Viola 3,774½ ft.

Raymond, Rice County: Hall & Branine 1 Burns, N½ NW SW 15-20-10w, pumped 3,000 bbl., Arbuckle 3,372 ft., 5-in. 3,371 ft., acid, T.D. 3,376 ft.

Roxbury, McPherson County: Westgate-Greenland 1 Henne, NW SE SW 18-17-1w, old well, old T.D. 2,676 ft., Mississippi 2,670 ft., T.D. 3,360 ft., potential 848 bbl.

Severy, Greenwood County: Lemon & Shewmaker 1 Mitchell, NW SW SE 17-28-11e, dry, T.D. 1,215 ft., Kansas City 1,020 ft.

Silica, Rice County: Continental 5 L. K. Gum, E½ SW SE 34-19-10w, pumped 506 bbl. oil and 34 bbl. water, Arbuckle 3,298-3,305 ft., 6-in. 3,297 ft., shot, T.D. 3,309 ft.

(Continued on Page 74)

Three Rigs Running at Barada, Two at Falls City

ST. JOSEPH, Mo., Dec. 1.—Skelly Oil Co. has three tests under way in the Barada pool of Richardson County. Of these, 1 Steinbrink is the farthest advanced, being in the Hunton lime.

In the Falls City pool, Ohio Oil Co. improved 1 Sandrock by deepening. The company was about to test Hunton lime at 9 Bucholz and had cellar and pits for 10 Bucholz. E. S. Towle and John Isaacks started drilling 1½ miles west of the Falls City pool.

Johnson & Short, drilling a wildcat near Salem, in Richardson County, Nebraska, were below 2,235 ft.

NEBRASKA COMPLETION

Falls City, Richardson County: Ohio 1 Sandrock, NW SE NW 20-1n-16e, old well drilled deeper, old T.D. 2,260 ft., T.D. 2,285 ft., swabbed 500 bbl.

MISSOURI COMPLETION

Wildcat, Pemiscot County (Southeast Missouri): O. W. Killam 1 Pattinson, SE SW 33-18n-13e, dry, T.D. 3,345 ft.

Wildcat Campaign Yields Two Discoveries; Three in Prospect

By STAFF CORRESPONDENT

MATTOON, Ill., Dec. 1.—A new oil pool was opened in Jasper County last week and a second was in prospect in Clay County as wildcat exploration continued unabated by weather or material shortages.

The pool opener was the Craft-Powers 1 Wade, W½ SW NW 5-5n-14w, 2½ miles southeast of the village of Ste. Marie and 6 miles due east of nearest production in the Dundas Consolidated pool of Jasper and Richland counties. Following an acid treatment the well flowed nearly 900 bbl. initially from the McClosky lime. The well has now been put on pump and is producing at the rate of about 300 bbl. daily.

Three offset locations have been announced and several other tests are expected in the area. About 2 miles southwest of the discovery, Jablonski et al have staked location for another wildcat, 1 Fischer, W½ SE SW 18-5n-14w.

Two Clay County Wildcats Showing for Producers

Operators at a prospective pool opener near Xenia in Clay County are plugging back to the Aux Vases sand after recovering water in the McClosky. The test, Sanders 1 Thompson, SW SE 30-3n-6e, showed 1,800 ft. of water and some oil when plug was drilled. A 4-ft. plugback failed to stop the water and operators decided to plug back to shows in more shallow formations. It was hoped that the well would prove productive in three horizons, the Benoist, Aux Vases, and McClosky. The well will probably be perforated opposite the Aux Vases and perhaps the Benoist. It is believed that this test, if successful, will establish a definite production trend in the area.

Meanwhile, another Clay County wildcat is being closely watched. B. F. Williams 1 Nolan, S½ SE NW 10-2n-7e, 1½ miles west of the Clay City pool, flowed oil during a 10-minute drill-stem test of the McClosky at 3,063 ft.

Fayette County Wildcat May Prove New Area

Fayette County last week boasted an important development when 600 ft. of oil rose in the hole at Luttrell et al 1 Aukamp, NE NE NE 31-5n-3e, in Lone Grove Township. No. 1 Aukamp is being completed in the Benoist at 1,906 ft. where 13 ft. of good saturation was encountered. The test offsets Luttrell 1 Ford, lone producer in the area, but promises to be a larger well.

Wildcats Show Promise Throughout Basin Area

About ½ mile southeast of the Roland field in White County, Stroube & Stroube 1 W. A. Hamilton, NE SE SW 13-7s-8e, recovered 22 ft. of saturation in the Aux Vases sand at 2,900-22 ft. An electrical survey is being made to determine whether casing should be set. Meanwhile, about 1 mile north and east of production in the field, N. V. Duncan, Inc., has cemented casing at 1 M. Powell, NW NW SE 1-7s-8e, to test saturation in the Aux Vases at 3,012-32 ft. and in the Levias at 3,036-40 ft.

Swan-King Oil Co.'s pool opener 6 miles west of the West Fairfield pool, 1 Spencer, W½ SE NE 28-1s-6e, is scheduled to be acidized. The test has been swabbing about 8 bbl. of oil an hour from the McClosky at 3,161-70 ft. and 3,201-10 ft.

ILLINOIS COMPLETIONS

Wildcats

Clinton County: Jack Darnell et al 1 Beckmeyer, S½ NE NW 32-3n-2w, dry at 1,236 ft., base Pennsylvania 1,025 ft., Cypress 1,043 ft., Paint Creek 1,140 ft., Benoist 1,199 ft.

Kerwin et al 1 Schlafly Farm & Trust, SW SW NW 20-2n-1w, dry at 1,500 ft., Menard 915 ft., Vienna 992 ft., Tar Springs 998 ft., Glen Dean 1,101 ft., Cypress 1,253 ft., Cypress sand 1,309 ft., Benoist 1,423 ft.

Clay County: Carter 1 A. M. Keller, W½ SW SW 4-2n-5e, pumped 44 bbl. oil and 3 bbl. water, 40-qt. shot 2,787-2,800 ft., 80-qt. shot 2,785-2,805 ft., Aux Vases 2,782 ft., T.D. 3,003 ft., P.B. 2,806 ft., *pool opener.*

Coles County: Carter 1 W. H. Haybrook, E½ SE SW 2-13n-7e, pumped 54 bbl. oil and 1½ bbl. water, 10-qt. shot 1,824-28 ft., Aux Vases 1,824 ft., T.D. 1,842 ft., P.B. 1,829 ft., *pool opener.*

Hamilton County: A. J. Hammer 1 H. E. Seel, W½ SE NW 5-5s-5e, dry at 3,463 ft., Glen Dean 2,644 ft., Hardinsburg 2,737 ft., Golconda 2,821 ft., Barlow 2,936 ft., Cypress sand 2,973 ft., Benoist 3,116 ft., Renault 3,148 ft., Aux Vases 3,230 ft., Ste. Genevieve 3,289 ft., Fredonia 3,333 ft., McClosky 3,411 ft.

Jasper County: Craft et al 1 C. Wade, W½ SW NW 5-5n-14w, flowed 500 bbl., 5,000 gal. acid, McClosky 2,829-35 ft., T.D. 2,841 ft., *pool opener.*

Lawrence County: J. N. Webster 1 A. L. DesBouef, NW NE NE 18-2n-11w, dry at 974 ft.

Richland County: Pure 1 D. M. Miller, W½ SE NE 2-3n-9e, dry at 3,000 ft., Glen Dean 2,413 ft., Ste. Genevieve 2,940 ft., Rosiclare 2,958 ft., Fredonia 2,972 ft., McClosky 2,972 ft.

Ed Nolf 1 Sterchi heirs, SW NW NW 6-4n-14w, flowed 782 bbl., natural, McClosky 3,024-30 ft., T.D. 3,033 ft., *pool opener.*

St. Clair County: Gass & Frazier 1 Hon, NE NW NE SW 26-1n-9w, dry at 1,499 ft., Ste. Genevieve 373 ft., Kinderhook 1,040 ft., Chattanooga 1,115 ft., Devonian 1,120 ft., Maquoketa 1,295 ft. Trenton 1,469 ft.

Shelby County: Carter 1 Lula Storm, SW SE NW 28-10n-4e, dry at 2,285 ft., Glen Dean 1,484 ft., Cypress 1,613 ft., Cypress sand 1,652 ft., Paint Creek sand 1,722 ft., Benoist 1,773 ft., Renault 1,796 ft., Aux Vases 1,815 ft., Ste. Genevieve 1,859 ft., Rosiclare 1,877 ft., Fredonia 1,891 ft., St. Louis 2,040 ft., Salem 2,268 ft.

Washington County: E. J. Bergundthal 1 Dement, SW NW NE 32-2s-4w, dry at 2,395 ft., base Pennsylvanian 600 ft., Glen Dean 710 ft., Golconda 765 ft., Barlow 858 ft., Cypress sand 913 ft., Benoist 1,025 ft., Benoist sand 1,030 ft., Aux Vases 1,045 ft., Ste. Genevieve 1,244 ft., Chattanooga 2,335 ft., Devonian 2,347 ft.

Wayne County: Pure 1 Sumpter, W½ SW SW 6-1s-8e, dry at 3,185 ft., Clore 2,133 ft., Menard 2,352 ft., Tar Springs 2,470 ft., Glen Dean 2,568 ft., Hardinsburg 2,592 ft., Golconda 2,652 ft., Barlow 2,750 ft., Cypress sand 2,789 ft., Paint Creek 2,928 ft., Paint Creek sand 2,935 ft., Ste. Genevieve 3,100 ft., Fredonia 3,153 ft.

Fields

Benton, Franklin County: Bialock & Walters 2 Rice, SE SW NE 35-6s-2e, pumped 275 bbl. oil and 5 bbl. water, 25-qt. shot on bottom, Tar Springs 2,110 ft., T.D. 2,140 ft.

Shell 9 C. W. & F., SE SE NW 24-6s-2e, pumped 107 bbl. in 22 hr., 10-qt. shot 2,097-2,107 ft., Tar Springs 2,076 ft., pay 2,081-2,107 ft., T.D. 2,107 ft.

Centerville East, White County: Sun 1 R. Strow, SE SE NW 7-4s-10e, pumped 151 bbl., Tar Springs 2,488 ft., 2,540-51 ft., T.D. 2,551 ft.

Clay City, Wayne County: Pure 3-C E. A. Heith, E½ SE NE 36-2n-7e, pumped 27 bbl. oil and 47 bbl. water, 5,000 gal. acid, McClosky 3,009-14 ft., T.D. 3,025 ft.

Dale, Hamilton County: Sinclair 2 Prince, SW SW NW 31-5s-7e, pumped 26 bbl., 5-qt. shot 2,956-70 ft., Benoist 2,950-69 ft., T.D. 3,071 ft.

Carter 1 Johnson, SE SW SE 12-6s-6e, flowed 168 bbl. in 22 hr., 40-qt. shot 3,079-89 ft., Aux Vases 3,076-91 ft., T.D. 3,094 ft.

McBride 1 J. Mayberry, NE SE SE 12-6s-6e, pumped 144 bbl., 40-qt. shot 3,050-74 ft., McClosky 3,150-55 ft., T.D. 3,202 ft., P.B. 3,080 ft.

Texas 8 R. R. Johnson, NE NE SE 7-6s-7e, flowed 450 bbl., 30-qt. shot 2,993-3,010 ft., Aux Vases 2,980-85 ft., T.D. 3,031 ft., P.B. 3,010 ft.

Texas 9 R. R. Johnson, SE NE SE 7-6s-7e, flowed 275 bbl., natural, Aux Vases 2,984-3,027 ft., T.D. 3,030 ft.

Texas 12 M. Davis, SW NW NW 8-6s-7e, pumped 150 bbl., 40-qt. shot 3,002-22 ft., Aux Vases sand 2,970-77 ft., saturation 2,977-3,022 ft., T.D. 3,024 ft.

Dundas, Jasper County: Pure 1 Bigard Consol., E½ SW NE 33-6n-10e, dry at 2,850 ft., Glen Dean 2,295 ft., Barlow 2,427 ft., Aux Vases 2,727 ft., Ste. Genevieve 2,770 ft., Rosiclare 2,788 ft., Fredonia 2,803 ft.

Pure 2 Roberts Consol., E½ SW SE 33-6n-10e, flowed 464 bbl., 1-in. choke, 5,000 gal. acid, McClosky 2,785-87 ft., 2,803-11 ft., T.D. 2,825 ft.

Fairfield, Wayne County: Watkins & Weinert 2 Kincaid, W½ SE NW 36-1s-7e, pumped 280 bbl., perf. 3,341-51 ft., 5,000 gal. acid, McClosky 3,342-51 ft., 3,353-55 ft., T.D. 3,363 ft.

Goldengate, Wayne County: New Penn. Dev. 1 Hart, E½ SW SE 30-2s-9e, pumped 18 bbl. oil and 50 bbl. water, 1,000 gal. acid, perf. 3,344-54 ft., 3,328-34 ft., McClosky 3,324-34 ft., 3,344-47 ft., 3,350-54 ft., T.D. 3,373 ft.

Griffin, Wabash County: Longhorn 24 Helm, N½ SE SE NE 22-3s-14w, pumped 220 bbl., natural, Tar Springs sand 2,148-55 ft., 2,164-76 ft., T.D. 2,176 ft.

Inman East, Gallatin County: Oil Management 8 Egyptian Tie & Timber, NW SE SE 16-8s-10e, pumped 50 bbl., 20-qt. shot 2,416-36 ft., perf. 2,072-88 ft., 2,077-79 ft., Cypress sand 2,408 ft., Tar Springs 2,071-2,102 ft., T.D. 2,436 ft.

Irvington, Washington County: McCarthy 1 N. Buhl, SW NE NW 23-1s-1w, pumped 40 bbl., 10-qt. shot 1,538-48 ft., Benoist 1,534 ft., T.D. 1,550 ft.

Johnsonville, Wayne County: Texas 5 Schultz, S½ SE SE 21-1n-6e, flowed 918 bbl., 4,000 gal. acid, perf. 3,092-3,100 ft., 4,000 gal. acid, McClosky 3,139-44 ft., T.D. 3,191 ft.

Texas 6 Schultz, S½ NE SE 21-1n-6e, swabbed 120 bbl., 4,000 gal. acid, McClosky 3,185-88 ft., 3,192-3,204 ft., T.D. 3,232 ft.

Ohio 2 Taylor, N½ NW SW 23-1n-6e, pumped 391 bbl., 3,000 gal. acid, McClosky 3,160-74 ft., 3,184-87 ft., T.D. 3,195 ft.

Texas 1 Ray, S½ NW SE 26-1n-6e, swabbed 286 bbl., 4,000 gal. acid, McClosky 3,141-49 ft., 3,151-53 ft., T.D. 3,173 ft.

First Nat. Pet. Trust 2 Case-Scuddamore, W½ SW NE 28-1n-6e, pumped 72 bbl., 5,000 gal. acid, McClosky 3,150-60 ft., 3,177-75 ft., T.D. 3,188 ft., P.B. 3,178 ft.

Jablonski 2 Bratton, SW NW NE 35-1n-6e, pumped 10 bbl. oil and 2 bbl. water, Aux Vases sand 3,021-26 ft., T.D. 3,040 ft.

Deep Oil 1 Barber, N½ SE NE 26-1n-6e, dry at 3,190 ft., Aux Vases 3,040 ft., Ste. Genevieve 3,102 ft., McClosky 3,171 ft.

Louden, Fayette County: Carter 3 J. L. Crum, NW NW SE 16-7n-3e, pumped 12 bbl., 20-qt. shot 1,566-72 ft., reshot 20 qt. 1,572-78 ft., Cypress sand 1,561 ft., T.D. 1,578 ft.

Carter 2 D. Miller, NE NW NE 16-8n-3e, pumped 20 bbl. oil and 30 bbl. water, 10-qt. shot 1,505-08 ft., Cypress sand 1,505 ft., T.D. 1,512 ft.

Carter 3-D R. Weber, W½ SE SE 29-8n-3e, flowed 250 bbl. through ½-in. choke, Devonian 3,011 ft., pay 3,091 ft., T.D. 3,097 ft.

Mill Shoals, White County: H. H. Weinert 3 Miller Bros. et al, NW NE NE 30-3s-8e, pumped 310 bbl., 55-qt. shot 3,204-25 ft., Aux Vases 3,199-3,225 ft., T.D. 3,225 ft.

Mount Carmel, Wabash County: O'Meara Bros. 2-A J. C. Utter, SW NW NE 17-1s-12w, 500,000 cu. ft. gas, perf. 2,339-44 ft., 500 gal. acid, perf. 2,018-26 ft., Cypress sand 2,009-26 ft., T.D. 2,424 ft., P.B. 2,026 ft.

Olds 5 Fairgrounds, SE NW SE 21-1s-12w, pumped 75 bbl., 50-qt. shot 1,980-95 ft., Cypress 1,977-95 ft., T.D. 1,995 ft.

Seaboard 2 Guisewite, SE NE NW 21-1s-12w, pumped 200 bbl., 50-qt. shot 1,980-93 ft., Cypress sand 1,955-63 ft., 1,968-93 ft., T.D. 1,993 ft.

New Harmony, White County: Superior 17-D H. C. Ford et al, NE SE NW 34-4s-14w, location abandoned.

Sun 39 E. R. Greathouse, SW SW NW 4-5s-14w, pumped 425 bbl., 4,000 gal. acid, McClosky 2,911-14 ft., 2,923-28 ft., T.D. 2,935 ft.

Pure 6-A Calvin, NE NE NW 9-4s-14w, pumped 97 bbl. oil and 3 bbl. water, 60-qt. shot 2,702-27 ft., Cypress sand 2,560 ft., Aux Vases 2,818 ft., T.D. 2,860 ft., P.B. 2,727 ft.

Pure 7-A Calvin, NE SE NW 9-4s-14w, pumped 13 bbl. oil and 69 bbl. water, 40-qt. shot 2,710-27 ft., Paint Creek sand 2,705-42 ft., T.D. 2,860 ft., P.B. 2,735 ft.

Superior 15-D H. C. Ford et al, SW SE NW 34-4s-14w, pumped 75 bbl., 10-qt. shot 2,818-40 ft., 10-qt. shot 2,584-88 ft., perf. 2,719-34 ft., Cypress sand 2,592 ft., Aux Vases 2,817-31 ft., T.D. 2,840 ft.

Superior 4-F H. C. Ford et al, SW SW 34-4s-14w, pumped 100 bbl., 40-qt. shot 2,590-98 ft., Cypress sand 2,584-98 ft., T.D. 2,598 ft.

Ivan White 3 Ford heirs, NE NW SE 34-4s-14w, pumped 72 bbl., 30-qt. shot 2,594-2,604 ft., 150-qt. shot 2,594-2,602 ft., Cypress sand 2,550 ft., T.D. 2,604 ft.

Bay Pet. 1 O. R. Evans, NW NW SW 4-4s-14w, location abandoned.

North Boos, Jasper County: Texas 4 C. M. Jourdan, NW NE NW 8-6n-10e, flowed 410 bbl., 4,000 gal. acid, McClosky 2,787-95 ft., T.D. 2,799 ft.

Schulman Bros. 1 Acklin, SE NE SW 5-6n-10e, flowed 200 bbl., 5,000 gal. acid, McClosky 2,764-68 ft., pay 2,788-99 ft., T.D. 2,799 ft.

Parkersburg, Edwards County: A. F. Dye 1 Kent, NW NW SW 32-2n-14w, flowed 1,800 bbl., 4,000 gal. acid, pay 3,115-24 ft., T.D. 3,124 ft.

Ohio 2 Markham, NE SW NW 32-2n-14w, flowed 945 bbl., 3,000 gal. acid, McClosky 3,098 ft., T.D. 3,103 ft.

Roland, White County: Sinclair 1 C. V. Reddy, SE SE SE 2-7s-8e, flowed 347 bbl., perf. 2,214-16 ft., 2,200-13 ft., 10-qt. shot 2,776-80 ft., 25-qt. shot 2,769-78 ft., Waltersburg sand 2,203 ft., Benoist 2,753 ft., T.D. 2,950 ft., P.B. 2,786 ft.

Rural Hill, Hamilton County: Shell 1-B L. Cox, SE SE SE 11-6s-5e, flowed 130 bbl. oil and 28 bbl. water, Aux Vases and Levias, perf. 3,224-40 ft., 3,294-3,304 ft., 1,000 gal. acid, reacidized 2,500 gal., perf. 3,224-40 ft., reacidized 2,500 gal., perf. 3,294-3,306 ft., 15-qt. shot 3,162 ft., Aux Vases sand 3,153-85 ft., T.D. 3,387 ft.

Shell 2 Braden Church Comm., NW NW SW 13-6s-5e, flowed 641 bbl., 3,000 gal. acid, Levias 3,186-3,202 ft., T.D. 3,308 ft.

Shell 2 J. Nohava, SW SW NE 13-6s-5e, flowed 350 bbl. oil and 3 bbl. water, Aux Vases and Levias, perf. 3,190-3,200 ft., 2,500 gal. acid, perf. 3,277-84 ft., 2,500 gal. acid, 15-qt. shot 3,122-37 ft., Aux Vases 3,100 ft., T.D. 3,296 ft.

Kewanee Oil 1 C. A. Culpepper, SW SW SE 14-6s-5e, pumped 67 bbl., 80-qt. shot 3,082-3,111 ft., Aux Vases sand 3,080 ft., T.D. 3,115 ft.

Texas 3 Lockwood, NE NE NE 14-6s-5e, flowed 615 bbl. from Aux Vases and Levias, 3,000 gal. acid, perf. 3,240-50 ft., 3,291-95 ft., 3,000 gal. acid, 30-

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NORTH CENTRAL TEXAS

K. M. A. Southwest Edge Well Opens Shallow-Pay Area

By D. H. STORMONT

WICHITA FALLS, Tex., Dec. 1.—The opening of a new shallow oil-producing area on the southwest edge of the K.M.A. field was indicated last week at C. H. Staley 1 Mangold, located in the northeast part of a 560-acre lease in the P. Castleman Survey, Abstract 35.

No. 1 Mangold was drilled to 1,736 ft. and 7-in. casing set at 1,729 ft. After operator drilled plug, oil rose in the hole 600 ft. in 1½ hours. At last report, operator was preparing to run tubing for completion attempt. Nearest production from this level, believed to be the Gunsight, is about 3 miles to the northeast.

Meanwhile, southeast of Mankins in the same county, Sunray Oil Co. 1 Seibold set 5½-in. casing at 5,033 ft. for production tests. Operator gun-perforated casing at 5,002-12 ft. opposite a section of the lower Caddo and treated the formation with 5,000 gal. of acid.

The decision to attempt completion was based in part on the result of a drill-stem test of the section which recovered 90 ft. of oil-cut mud. However, at the end of the week, swabbing had resulted in only a slight show of oil.

Ordovician Tests in Clay and Montague Counties Plugged Back

In the Deer Creek area of Clay County, Shell 1 Williams, Section 63, J. H. Belcher subdivision, found only salt water in the Ellenburger lime at 5,874 ft. after treating the section with acid. No. 1 Williams was originally contracted to 6,500 ft., but operator has plugged back to 5,773 ft. to test the Mississippian.

The Montague County wildcat, Continental 1 Winder, which last week showed for a Viola lime (upper Ordovician) discovery, has been plugged back to test the Caddo lime. The appearance of salt water in the Viola caused operator to plug back, although the Viola discovery was rated at approximately 400 bbl. of oil daily. However, 1 Winder was expected to make even a better well in the Caddo.

No. 1 Winder was drilled to 6,610 ft. and at that depth swabbed 56 bbl. of oil and 10 bbl. of water in 7 hours. Operator plugged back and at the end of the week had perforated casing to test the Caddo lime, topped at 6,039 ft. Location is in Section 4, Limestone C.S.L. Survey.

Wildcatting Activity Takes Sudden Jump

Three new wildcat locations were announced during the week for the district and acreage was being assembled for three more wildcats to be drilled in the near future. Two of the exploratory tests were staked in Montague County and the third in Throckmorton County. Operators were busy in Jack County assembling new lease blocks for later tests.

The sudden renewal of wildcat exploration in Jack County is probably a result of the recent discovery by Taubert & McKee of a new Caddo lime pool. About 8 miles east of the discovery and just south of Post Oak, R. A. Conkling has assembled 2,500 acres on which he plans to drill a Caddo lime test within the next 90 days.

West of the Taubert & McKee discovery, Wilcox Oil & Gas Co. has taken acreage in the J. L. Sleight Survey, Abstract 867, and is completing plans to drill a 4,000-ft. wildcat on the block.

Southwest of Jermyn, Million Oil Co. has assembled an 860-acre spread of leases out of the Oliver Loving ranch. The company is reportedly planning a 4,000-ft. test. Leases are located in the A. McCullough, William Crawford and W. M. Biffle surveys.

Two wildcat locations were announced at the first of the week for Montague County. Ten miles southwest of Vernon, Lester Luecke has staked location for 1 Emma Forester in the NE cor. Section 30, Block 9, H.&T.C. Survey. The wildcat will go to 3,500 ft.

A 2,400-ft. test has been staked by Ross Robertson at 1 Webb. No. 1 Webb will be drilled 1,780 ft. from the south and 467 ft. from the west lines of Section 8, Block 5, H.&T.C. Survey, 15 miles southwest of Electra.

The Throckmorton County wildcat will be drilled by Fain-McGaha Oil Corp. and J. S. Bridwell at 1 T. G. Hendrick in the extreme southwestern part of the county north of the Avoca-Ivy pools. Drilling operations are scheduled to get under way immediately and the test will be drilled with rotary to a sand section at 2,800 ft. Location is in the NW cor. SE Section 104, Indianola Survey.

NORTH TEXAS COMPLETIONS

Wildcats

Baylor County: Tom F. Hunter 1 Robertson C.S.L., Robertson C.S.L. Sur., A-280, dry at 3,026 ft.

Jack County: Jim Robinson 1 J. J. Power, M. Hunt Sur., A-298, dry at 497 ft.

Fields

Baylor County: British American Prod. Co. 3-A Claude Cowan, Sec. 102, T.&N.O. Sur., A-1311, dry at 2,516 ft.

Hull-Silk, Archer County: Gulf 25 P. Siegel, Sr., Sec. 22, Lot 4, A.T.N.C.L. Sur., 119 bbl. in 24 hr., pumping, 2,000 gal. acid 4,359-4,000 ft., T.D. 4,410 ft.

Henry Grace 4-B L. F. Wilson, Sec. 1, A.T.N.C.L. Sur., 50 bbl. in 24 hr., pumping, pay 1,521-30 ft.

K.M.A., Archer County: Deep Oil Dev. Co. 2-A E. P. Griffin, Sec. 13, Palo Pinto Sur., A-339, 64 bbl. in 3 hr., ½-in. choke, est. 325 bbl., top K.M.A. 4,098 ft., pay 4,412-24 ft.

K.M.A., Wichita County: Hanlon-Buchanan 11-A T. L. Burnett, Sec. 24, H.&G.N. Sur., A-435, 10 bbl. in 24 hr., pumping, pay 683-706 ft.

Hanlon-Buchanan 16-E Fassett & Tuttle, R. Brown Sur., A-523, 57 bbl. in 3 hr., est. 225 bbl., top K.M.A. 3,894 ft., 110-qt. shot 4,045-85 ft.

Hammon, Hanlon-Buchanan 46 Fassett & Tuttle, Sec. 1, E.T. Sur., A-76, 63 bbl. in 3 hr., ¾-in. choke, est. 275 bbl., top K.M.A. 3,785 ft., 90-qt. shot 3,970-89 ft., T.D. 3,992 ft.

Shell and Phillips 18-E-A D. R. Preston, Sec. 20, Blk. 7, H.&T.C. Sur., 64 bbl. in 3 hr., ¾-in. choke, est. 190 bbl., top lime 3,824 ft., Ellenburger 4,472 ft., 100-qt. shot 4,478-84 ft.

Tide Water and Perkins-Cullum 15 Charles Pettit, E. Durian Sur., A-54, 225 bbl. in 3 hr., ¾-in. choke, est. 1,200 bbl., top K.M.A. 3,622 ft., Caddo 3,816 ft., Ellenburger 4,160 ft., pay 4,160-4,325 ft.

Tide Water and Perkins-Cullum 14 Charles Pettit, E. Durian Sur., A-54, 227 bbl. in 3 hr., ¾-in. choke, est. 1,100 bbl., top K.M.A. 3,642 ft., Caddo 4,350 ft., Ellenburger 4,224 ft., 3,000 gal. acid 4,234-4,350 ft.

Shell and Phillips 40 N. C. Griffin, F. Jordan Sur., A-167, 191 bbl. in 3 hr., ¾-in. choke, est. 900 bbl., top Ellenburger 4,310 ft., pay 4,310-63 ft.

Wolf & Hull 9 Daume, Sec. 1, S.P. Sur., A-429, 9 bbl. in 24 hr., pumping, pay 689-94 ft.

Mathis, Jack County: Phillips 1 W. A. Horn, A. N. Lattimer Sur., A-363, dry at 3,300 ft.

T.C.U., Cooke County: Frank & Fred Jones Drilling Co. 1 C. J. Fette, J. T. Townsley Sur. A-1551, dry at 2,164 ft., old well drilled deeper.

Frank & Fred Jones Drilling Co. 2 C. J. Fette, J. T. Townsley Sur., A-1551, dry at 1,154 ft.

Dodson & Iglehart 1-B S. A. Lynn, Phillip Lynn Sur., A-1407, 25 bbl. in 24 hr., pumping, pay 1,072-85 ft.

Wilbarger, Wilbarger County: J. A. Wood 1 Mary L. Womock, Sec. 1, Blk. 7, H.&T.C. Sur., 101 bbl. in 3 hr., ¾-in. choke, est. 325 bbl., top Ellenburger 4,296 ft., 1,000 gal. acid 4,298-4,306 ft., T.D. 4,325 ft., old well drilled deeper.

Miscellaneous Fields

Archer County: Petroleum Producers Co. 22 R. H. King, Sec. 7, B.B.B.&C. Sur., A-48, 84 bbl. in 24 hr., pumping, pay 1,246-60 ft.

Deagin & Huffines 2 Hallie Longley, J. B. Hinds Sur., A-184, 8 bbl. in 24 hr., pumping, pay 877-86 ft.

C. T. Hedges 25-A T. L. Griffin, Sec. 1600, T.E.&L. Sur., 8 bbl. in 24 hr., pumping, 5-qt. shot 1,295-99 ft., T.D. 1,300 ft.

Clay County: Sussex Oil Corp. 8 E. H. Hamilton, Sec. 83, Byers Bros. subd., dry at 1,125 ft.

Fisher & Kahn 1 C. T. Taylor, W. Richardson Sur., A-1032, 85 bbl. in 24 hr., pumping, pay 1,131-41 ft.

Perkins & Cullum 4-B C. T. Taylor, Sec. 43, Bacon subd., 24 bbl. in 3 hr., pumping, est. 95 bbl., pay 1,098-1,108 ft.

Houston Bowers 2 S. W. Rice, Sec. 14, Thornberry subd., 33 bbl. in 12 hr., pumping, est. 50 bbl., pay 1,100-29 ft.

Sussex Oil Corp. 25 C. J. Shumake, Sec. 3, Bacon subd., 27 bbl. in 12 hr., pumping, est. 40 bbl., pay 1,103-27 ft.

George G. Golden 1 P. P. Langford, J. J. Myers Sur., A-986, dry at 1,254 ft.

Birdwell Oil Co. 1 S. J. Shumake, Sec. 12, Thornberry subd., dry at 1,360 ft.

George G. Golden 15-C First Texas Joint Stock Land Bank, Sec. 13, Thornberry subd., 50 bbl. in 24 hr., pumping, pay 1,122-32 ft., T.D. 1,138 ft.

Gulf 5 Worsham, Sec. 3, J. M. Swisher Sur., A-1084, 75 bbl. in 8 hr., pumping, est. 150 bbl., top Caddo 5,585 ft., Ellenburger 5,247 ft., 12,000 gal. acid and 220-qt. shot 5,624-69 ft., T.D. 6,163 ft.

Cooke County: C. B. Christie 3 J. Felderhoff, Sec. 18, George Ivy Sur., A-516, 35 bbl. in 24 hr., pumping, pay 761-82 ft., T.D. 789 ft.

Magnolia 17 Ramsey, C. Furinash Sur., 70 bbl. in 6 hr., pumping, est. 200 bbl., pay 4,787-4,827 ft.

Jack County: B. C. Gilmore 6 Bertha Moore, J. W. Williams Sur., A-877, dry at 517 ft.

Montague County: Lesh & McCall 6 Cora L. Davenport, J. Fitch Sur., 147 bbl. in 24 hr., pumping, pay 2,478-98 ft.

Young County: R. J. Watson 1 Ella Watson, Sec. 249, T.E.&L. Sur., dry at 925 ft.

New Gas Area Struck By Stephens County Test

FORT WORTH, Tex., Dec. 1.—A new Marble Falls gas-producing area for Stephens County was expected to result from production tests under way at T. G. Shaw 1 E. Whalen. The wildcat prospect is located 467 ft. from the north and west lines of Section 1089. T.E.&L. Survey, Abstract 370, about 7 miles east of the old Ivan pool in the northern part of the county.

Originally contracted to 4,200 ft., 1 Whalen was drilled to a total depth of 4,706 ft. to test the Ellenburger lime (Lower Ordovician) which was found dry. Casing has been set at 4,077 ft. to test the Marble Falls section. A recent drill-stem test from 4,077-95 ft showed gas volume estimated at 12,000,000 cu. ft. daily.

Shallower Pay Sand Indicated For Jim Ned Pool

The possibility of a second and shallower pay level for the Jim Ned pool of Coleman County was indicated at Lewis Production Co. 1 C. M. Greer, Subdivision 2. H. Kegans Survey 520. A north offset to the field's discovery well drilled by Merry Brothers & Perini, 1 Greer drilled sand from 3,484-92 ft. with a show of oil and then recovered sand and sandy lime with slight show in a core taken at 3,492-96½ ft. The sand section was believed to be the Norris, which is the producing formation in the Anzac-Norris pool.

Haskell County Prospect Drills Deeper

Failing to get a water shutoff after the second cement job, E. C. Lawson drilled ahead at 1 Rose, Cass Survey, 7 miles east of the town of Haskell in Haskell County. The test was drilled to 2,984 ft., 2 ft. in sand, and casing set at 2,872 ft., where it stuck in lowering. Salt water was encountered in testing the section below casing. Operator plans to determine the thickness of the sand section before testing again.

Wildcat Staked in Taylor County

A new wildcat location for Taylor County was staked by Tom B. Medders 8 miles south of Merkel. To be drilled as 1 J. W. Moore, the location is in the SE SW SE of Section 74, Block 19, T.&P. Survey, ½ mile south of Blair. Contract depth for the test has not been reported.

WEST CENTRAL TEXAS COMPLETIONS

Wildcats

Brown County: M. W. Walker 1 D. Strange, 450 ft. from S and 1,400 ft. from E lines of farm, J. E. Melton Sur. 125, dry at 457 ft.

Haskell County: Joe Worsham 1 G. McLennam, S. C. Robertson Sur. 40, A-352, dry at 3,506 ft.

Mills County: Three Widows Oil Co. 1 J. F. Burdeth, Lot 59, Hays C.S.L. Sur. 114, dry at 3,266 ft., top Ellenburger 2,915 ft.

Shackelford County: Dickey Bros. 1 W. F. Tucker, 1,280 ft. from NW and 700 ft. from SW lines, Sec. 553, T.E.&L. Sur., dry at 553 ft.

C. B. Tubbs 1 A. T. Morrison, 160 ft. from S and 1,045 ft. from W lines, Sec. 46, B.O.A. Sur., dry at 625 ft.

Fields

Crosscut, Brown County: Ed Selvidge 3 C. M. Kilgore Robert Mitchell Sur. 141, 5 bbl. in 24 hr., pumping, 20-qt. shot 1,116-25 ft., T.D. 1,130 ft.

Lewis, Jones County: Butler & Horne and Miller 5 C. C. Lenderman, Sec. 5, Blk. 15, T.&P. Sur., 100 bbl. in 24 hr., 40-qt. shot 1,902-20 ft.

McMillian, Runnels County: Golden Petroleum Co. 6 R. M. McMillian, Lot 22, N. Travis Sur. 533, dry at 2,685 ft., old well drilled deeper, old T.D. 2,527 ft.

Novice, Coleman County: State Oil Corp. 2 C. F. Sprinkler, Sec. 46, Blk. 2, G.H.&H. Sur., 122 bbl. in 24 hr., 30-qt. shot 3,545-75 ft. T.D. 3,604 ft.

Sayles, Jones County: Condor Petroleum Co. 35 Henry Sayles, Jr., Sec. 5, Blk. 20, T.&P. Sur., 117 bbl. in 21 hr., pumping, pay 1,929-54 ft., T.D. 1,959 ft.

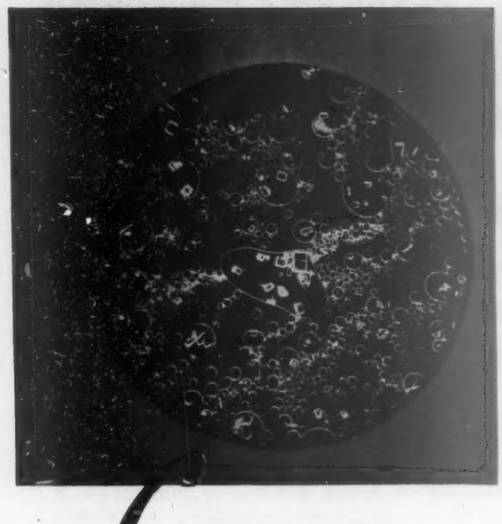
Sewalt, Brown County: Burton McCallum 5-A J. V. Sewalt, Sec. 1, M.E.P.&P. Sur., dry at 850 ft., lost hole.

Burton McCallum 2 Stella Rice, Lot 2, Charles Messer Sur. 127, 5 bbl. in 24 hr., pumping, pay 945-55 ft., T.D. 978 ft.

Burton McCallum 2-B J. W. Sewalt, Lot 4, Charles Messer Sur. 127, 5 bbl. in 24 hr., pumping, pay 874-94 ft.

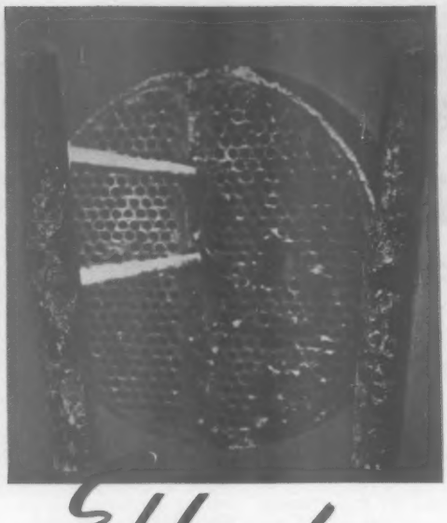
Shackelford, Shackelford County: J. F. Baker 7-A M. Davis, Sec. 17, Blk. 14, T.&P. Sur., 4 bbl. in 24 hr., pumping, 5-qt. shot 1,550-56 ft.

Strawn, Palo Pinto County: Gallagher & Hughes 1 Texas Co., Henry Bird Sur., A-26, dry at 1,175 ft.



Cause

Unusual photomicrograph showing presence of salt crystals in crude oil and brine emulsion.

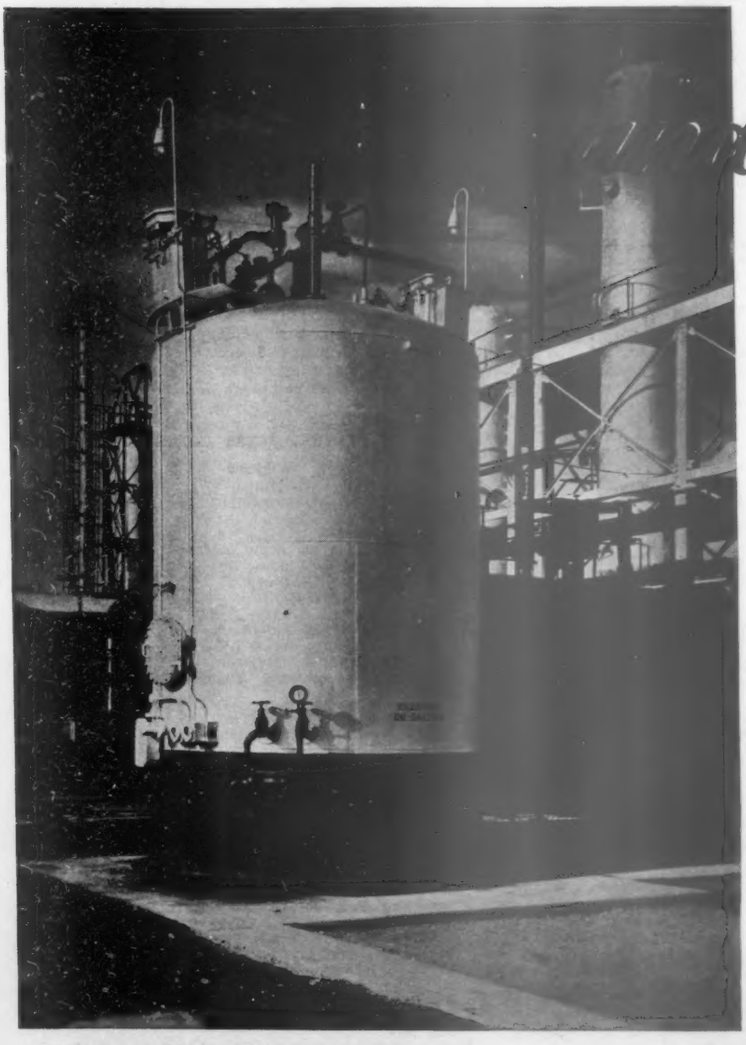


Effect

Lost "on stream time". Plugged, corroded and scaled refinery units. Raised maintenance costs. Frequent shutdowns.

Analysis

For an accurate analysis of your salt problem get in touch with Petreco. An expert survey of your problem involves no obligation.



THE ANSWER

to corrosion, scaling, plugging and attendant salt troubles which cause frequent shutdowns is Petreco Electromatic Desalting. The completeness of this answer is graphically witnessed by the many Petreco installations in daily operation. Investigate the economies offered by Petreco today.

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PETRECO

DESALTING **DEHYDRATING**

Third and Fourth Pay Zones Proven at Raisin City Field

By L. P. STOCKMAN

LOS ANGELES, Calif., Dec. 1.—Seaboard Oil Corp. proved up two additional oil zones in the Raisin City field of Fresno County last week. They are located below the two zones previously found by Shell Oil Co., Inc., in its discovery well and subsequent completions. The deep-zone discovery well of Seaboard was 77-13 in 13-15s-17e, a joint test of Seaboard, Tide Water Associated, and Union. In completing this well, the two upper zones now being produced by Shell were blanked off behind 7-in. casing which was cemented at 5,087 ft.

Top of the Seaboard zone was cored at 5,087 ft. and the bit was still in oil sand when drilling operations were concluded at 5,132 ft. There is a shale break between 5,087 ft. and 5,132 ft. so that the entire zone is not oil sand. The zones being produced by Shell on adjoining acreage were cored in 77-13 S.T.U. at 4,975 ft. and 5,006 ft. The importance of the Seaboard discovery lies in the possibility that the lower portion of its newly discovered zone may prove to be thicker and more productive than the overlying three zones. Other sections have been too thin to justify the expectation that Raisin City may become a field of primary importance.

Shell Oil Co., Inc., appears to have partially defined the limits of commercial production in the southeastern end of the structure at Raisin City as its 31-19 Santa Ana & Fresno Lands in 19-15s-18e, the most southeasterly well in the field, failed to have sufficient kick to result in a natural flow. This recent completion, bottomed at 5,077 ft., was finished on a compressor doing 214 bbl. of 25-gravity oil daily. Shell has been drilling east and southeast of its discovery well in the Raisin City field and the results of this work and development work of Seaboard to the northwest tend to indicate rather conclusively that the apex of the Raisin City structure is located north and west of the discovery well. This is particularly true in view of the fact that Shell did not find the Seaboard's two new deeper zones in its discovery well or if they were noted they were not considered especially promising.

Shell's discovery well in this field was drilled on the Properties, Inc., lease in 18-15s-18e, to a depth of 6,429 ft. This well drilled entirely through the Miocene and wound up in the Eocene after having logged the probable equivalent of the Gatchell zone at 6,396 ft. Top of the Kreyenhagen was placed at 5,986 ft. and top of the Eocene at 6,310 ft. On the way out of the hole, Shell made formation tests at 6,176-6,320 ft. and 5,176-5,243 ft. but failed to develop commercial production and accordingly finished the well at 5,005-45 ft. The interval at 5,176-5,243 ft. may be the Seaboard's newly discovered zone and opens up possibilities at greater depth on top of the structure.

Union Avenue Field May Develop Into Important Area

Hancock Oil Co. has completed its third producing well in the Union Avenue field of Kern County which it discovered several months ago and preparations are under way to begin early work on a fourth project which will, like the previous three wells, be located on the Roberts lease. The Union Avenue field is one of the most underrated recent discoveries due probably to the fact that very little is known about it by the industry in general.

When development work was started, Hancock's geological department recommended the initial wildcat on assumption that commercial production could be anticipated in the Santa Margarita formation of upper Miocene age. Before the Santa Margarita was reached, however, the well found a good looking oil sand in the Chanac of lower Pliocene age with the result that all wells have been finished in the Chanac. For this reason the potentiality of the Santa Margarita is still unknown.

Faulting has complicated subsurface conditions at Union Avenue with the result that it is impossible to harmonize the results of drilling. Hancock's 1 Roberts, for instance, produces an oil testing 15.1 gravity from a perforated interval at 5,275-5,315 ft., while 2 Roberts produces a crude oil testing 25.8 gravity from an interval at 4,237-92 ft. The company's 3 Roberts completed a few days ago is a gas well good for 500,000 cu. ft. of gas daily with no oil from 4,240 ft. The only explanation in the light of the limited data available is the possibility that Hancock Oil Co. has developed commercial production in the equivalent of the Martin and Kernco zones in the Chanac of lower Pliocene age.

Certainly the two gravities of oil produced are coming from separate zones or isolated intervals. The productive area in the Union Avenue field is restricted to that acreage west of the Union Avenue fault which has a northwest-to-southeast trend and roughly parallels Union Avenue, a component part of Highway 99. This fault is very sharp as it will be recalled Hancock Oil Co. drilled 2 Roberts east of Union Avenue and got a dry hole at 5,203 ft. but then plugged back to 2,400 ft. and whipstocked west across the fault and finished a flowing well. The Union Avenue field is not far enough advanced to venture an opinion as to its probable extent although it is certain Hancock Oil Co., who discovered the field, holds by far the largest amount of probable productive acreage.

SAN JOAQUIN VALLEY COMPLETIONS

Belridge North, Kern County: Belridge Oil Co. 61-26 fee, 26-27s-20e, flowed 495 bbl., 34.1-gravity, 12 per cent cut, 6,400,000 cu. ft. gas, 96/64-in. bean, pressures 250/800 lb., T.D. 8,400 ft., redrilled 8,320 ft., 7-in. casing cemented 8,100 ft., recompleted barefoot 8,100-8,320 ft. in Wagonwheel zone of Eocene age.

Coalinga Southeast, Fresno County: Standard 32-31-B fee, 31-19s-16e, flowed 1,425 bbl., 27.1-gravity, 0.4 per cent cut, 783,000 cu. ft. gas, 26/64-in. bean, pressures 750/1,000 lb., T.D. 8,200 ft., 60-mesh perf. 7,961-8,196 ft., completed in Gatchell sand of Eocene age.

Standard 57-31-B fee, 31-19s-16e, flowed 2,034 bbl., 26.9-gravity, 0.3 per cent cut, 1,056,000 cu. ft. gas, 36/64-in. bean, pressures 925-1,100 lb., T.D. 8,182 ft., 60-mesh perf. 8,000-8,181 ft., Kreyenhagen 6,716 ft., green sand 7,942 ft., oil sand 8,030-8,182 ft., completed in Gatchell oil sand.

Superior 3 Hight, 8-20s-16e, flowed 1,556 bbl., 27.9-gravity, 0.1 per cent cut, 764,000 cu. ft. gas, 64/64-in. bean, pressures 800/1,020 lb., T.D. 8,187 ft., 120-mesh perf. 8,129-87 ft., Kreyenhagen 6,845 ft., green sand 8,003 ft., oil sand 8,120-30 ft., bottomed and completed in Gatchell oil sand of Eocene age.

Kern River, Kern County: Riokern Oil Co. 2-A Kern, 28-28s-28e, pumped 5 bbl., 13.1-gravity, 5 per cent cut, T.D. 520 ft., perf. 380-520 ft., completed in Chanac oil sand of lower Pliocene age.

Kern Front, Kern County: Westates Pet. Corp. 15 Cauley, 16-28s-27e, pumped 192 bbl., 15.1-gravity, 20 per cent cut, T.D. 2,593 ft., 140-mesh, perf. 2,393-2,593 ft., completed in Tegeler zone, Kern River series of Pliocene age.

Kern River wildcat district, Kern County: Richfield Oil Corp. 1 Kraemer, 34-28s-27e, abandoned as a duster, T.D. 7,738 ft., no important showings, hole abandoned in basement granite 7,720-38 ft.

Kettleman North Dome, Kings County: Standard 1-1-U fee, 1-23s-18e, abandoned as unproductive commercially, T.D. 12,884 ft., had good showings of oil and gas in lower part of hole in probable Cretaceous age, mechanical failure developed before test made, redrilled to 11,460 ft., which tested wet. P.B. 8,555 ft., found no fluid, abandoned in hard gray sand.

Midway-Sunset, Kern County: Republic Pet. Co. 42-18 Front, 18-32s-23e, abandoned as a dry hole, T.D. 2,133 ft., abandoned in gray sand.

Mount Poso, Kern County: Shell 35 Security, 16-27s-28e, pumped 141 bbl., 15.1-gravity, 2 per cent cut, T.D. 2,080 ft., perf. 2,039-80 ft., completed in Vedder oil sand of Miocene age 2,048-80 ft.

Shell 23 Vedder Rail, 9-27s-28e, pumped 260 bbl., 14.9-gravity, 0.8 per cent cut, T.D. 2,046 ft., perf. 2,007-46 ft., completed in Vedder oil sand of Miocene age 2,006-46 ft.

Raisin City, Fresno County: Seaboard Oil Corp. 77-13 S.T.U., 13-15s-17e, flowed 235 bbl., 25.7-gravity, 0.2 per cent cut, 150,000 cu. ft. gas, 15/64-in. bean, pressures 800/1,375 lb., T.D. 5,132 ft., perf. 5,096-5,102 ft., 5,119-30 ft., completed in new lower zone below previous lowest production, gas sand 4,975 ft., oil sand 5,006 ft., lower oil sand 5,087 ft., bottomed in oil sand and shale.

Shell 31-19 S.A.F.L., 19-15s-18e, flowed gas lift 214 lb., 25-gravity, 3 per cent cut, 450,000 cu. ft. net formation gas, 128/64-in. bean, pressures 150/550 lb., T.D. 5,077 ft., perf. 5,019-44 ft., 5,057-77 ft., completed in Raisin City sand of Miocene age.

Ten Section, Kern County: Shell 53-29-A Kern County Land, 29-30s-26e, flowed 518 bbl., 34.2-gravity, 6 per cent cut, 387,000 cu. ft. gas, 15/64-in. bean, pressures 750/1,050 lb., T.D. 8,235 ft., perf. 8,098-8,233 ft., completed in Stevens oil sand of Miocene age 7,865-8,235 ft.

Second Turnbull Canyon Well Is Started

Continental Oil Co. has location staked for a second well to be drilled in the Turnbull Canyon field which the company discovered last month and material for derrick will be on ground within the next day or two. The second well will be drilled southwest of the discovery well and because of the shallow depth at which production is secured, Continental may have a second well on production in Turnbull Canyon before the close of the current year or shortly after the new year begins. The success of Continental Oil Co. in the Turnbull Canyon field has stimulated interest in the production possibilities of this general area and may lead to additional drilling.

Union Oil Co. has returned to its old Sansinena lease in the Whittier district in 30-2s-10w, and is drilling and spot coring at 2,200 ft. Small production was developed on the Sansinena property a number of years ago but since the property was owned in fee the company did not proceed with additional drilling. This location has considerable merit and may result in a discovery before drilling operations are concluded.

LOS ANGELES BASIN COMPLETIONS

Dominguez, Los Angeles County: Union 8 Austin, 29-3s-13w, flowed 601 bbl., 31.7-gravity, 0.6 per cent cut, 872,000 cu. ft. gas, 33/64-in. bean, pressures 300/550 lb., T.D. 7,125 ft., 120-mesh, perf. 7,068-7,125 ft., completed in seventh Callender zone of Miocene age.

Inglewood, Los Angeles County: Associated 72 Vickers, 7-2s-14w, flowed 1,125 bbl., 33.4-gravity, 0.4 per cent cut, 3,300,000 cu. ft. gas, 36/64-in. bean, pressures 1,500/2,000 lb., T.D. 8,320 ft., perf. 7,753-8,320 ft., completed in Sentous zone of Miocene age.

Huntington Beach, Orange County: Signal O. & G. Co. 31-B Bolsa, 33-5s-11w, pumped 330 bbl., 24.8-gravity, 0.5 per cent cut, T.D. 2,690 ft., perf. 1,883-2,689 ft., completed in upper Bolsa Chica zone of Pliocene age.

Southwest Expl. Co. 43 State, 3-6s-11w, pumped 480 bbl., 24.1-gravity, 0.5 per cent cut, T.D. 4,990 ft., perf. 4,181-4,990 ft., completed in Huntington tideland accumulation of Miocene age.

Long Beach, Los Angeles County: Shell 1 Hutton, 29-4s-12w, pumped 25 bbl., 20.8-gravity, 30 per cent cut, T.D. 4,175 ft., P.B. 3,677 ft., gun perf. 3,437-70 ft., 3,595-3,650 ft., recompleted in Alamitos zone of Pliocene age.

Shell 14 Mesa, 29-4s-12w, pumped 111 bbl., 20.9-gravity, 4 per cent cut, T.D. 3,630 ft., perf. 2,971-3,206 ft., 3,223-41 ft., 3,271-3,331 ft., 3,342-3,451 ft., 3,463-3,623 ft., completed in Alamitos and Brown zones of Pliocene age.

Puente wildcat district, Los Angeles County: Sunset Oil Co. 1 Baldwin, 11-2s-11w, abandoned as dry hole, T.D. 4,681 ft., Kraemer zone 3,888 ft., gun perf. 3,706-10 ft., 3,721-25 ft., bailed dry.

Wilmington, Los Angeles County: Barnhart-Morrow Consd. Oil Co. 1 Sherman, 29-4s-13w, flowed 250 bbl., 16-gravity, 0.8 per cent cut, 38/64-in. bean, pressures 65/150 lb., T.D. 3,704 ft., perf. 2,930-3,000 ft., 3,055-3,160 ft., 3,200-80 ft., 3,470-3,570 ft., 3,660-3,704 ft., completed in Ranger zone of Miocene age.

Brookline Oil Co. 2 Harbor, 4-5s-13w, pumped 297 bbl., 17.1-gravity, 2.2 per cent cut, T.D. 3,720 ft., perf 2,999-3,114 ft., 3,164-3,229 ft., 3,369-3,719 ft., completed in Ranger zone of Miocene age.

Long Beach Oil Dev. Co. 13-X Harbor, 2-5s-13w, flowed 463 bbl., 20-26 gravity, 1 per cent cut, 12/64 to 18/64-in. beans, pressures 140/600 lb., T.D. 3,871 ft., perf. 2,845-3,318 ft., 3,408-3,865 ft., multiple-zone completion in Terminal zone of Miocene age, upper Terminal flowed 185 bbl., 20.4-gravity, lower Terminal flowed 278 bbl., 26.1-gravity.

Long Beach Oil Dev. 13-X-Y Harbor, 2-5s-13w, flowed 462 bbl., 29.4-gravity, 0.1 per cent cut, 90,000 cu. ft. gas, 28/64-in. bean, pressures 220/260 lb., T.D. 3,970 ft., perf. 2,890-3,384 ft., 3,487-3,965 ft., multiple-zone completion in upper and lower Terminal zone of Miocene age, but only lower Terminal zone produced.

Petromont Oil Corp. 3 Wilmington, 32-4s-13w, pumped 137 bbl., 16.5-gravity, 20 per cent cut, T.D. 3,735 ft., perf. 3,023-3,182 ft., 3,202-3,302 ft., 3,480-3,648 ft., 3,690-3,731 ft., completed in Ranger zone.

Union Pacific R. R. 207 fee, 3-5s-13w, flowed 353 bbl., 21.7-gravity, 0.1 per cent cut, 65,000 cu. ft. gas, 28/64-in. bean, pressures 150/300 lb., T.D. 2,838 ft., 60-mesh gravel-packed perf. 2,547-48 ft., 2,568-2,625 ft., 2,645-2,838 ft., completed in Ranger zone of Miocene age.

Union Pacific R. R. 209 fee, 3-5s-13w, flowed 385 bbl., 31.3-gravity, 0.1 per cent cut, 40,000 cu. ft. gas, 42/64-in. bean, pressures 350/100 lb., T.D. 4,003 ft., 60-mesh perf. 3,530-3,607 ft., 3,632-77 ft., 3,732-99 ft., 3,907-54 ft., 3,969-95 ft., completed in upper Terminal zone of Miocene age.

Well Surrounded by Dry Holes Comes in at Oak Canyon

The surprise of the week in the Coastal district which comprises productive acreage in Ventura, San Luis Obispo, Santa Barbara, and northwestern Los Angeles County, was the completion of 1 Wickham of

(Continued on Page 73)

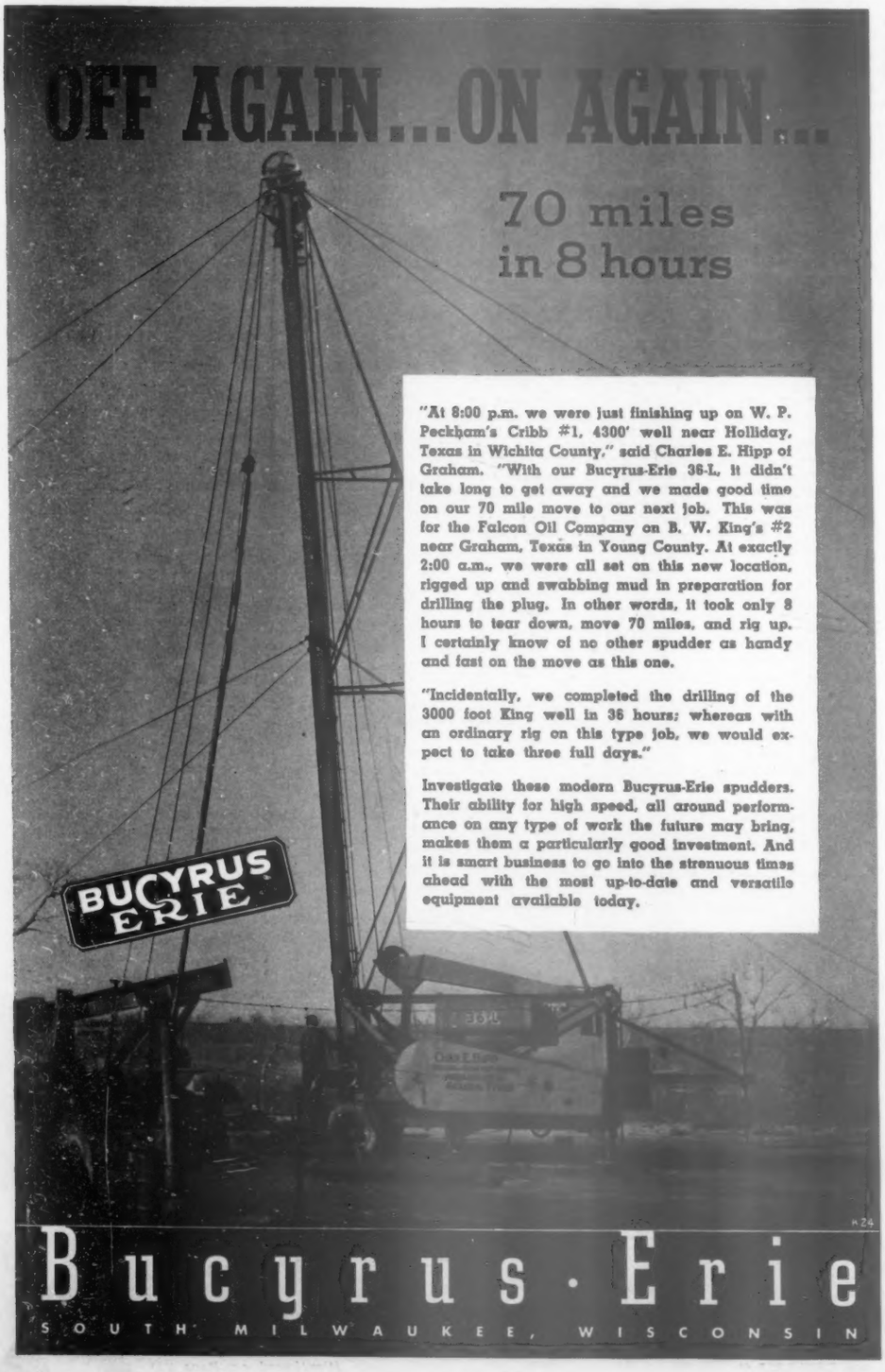
Wilcox Pay Is Opened Close To Mississippi State Line

By R. MARNE SANFORD

SHREVEPORT, La., Dec. 1.—In the extreme eastern part of Catahoula Parish and only some 20 miles from the Mississippi border, a new deep wildcat discovery is flowing oil from the Wilcox horizon. It is near the Concordia Parish line and just 10 miles northeast of the most recently opened Larto Lake field, also in Catahoula Parish.

The discovery is Phillips Petroleum and R. L. Fisher 1 Cotton-Womack, located in C NW NE 12-6n-6e. At the close of the week it was flowing 12 bbl. of fluid hourly, about half of which was oil. It was perforated in the Wilcox sand from 5,535-40 ft. and swabbed until it kicked off for the flow. Testing was to continue over the week end and if the water is not exhausted the perforations will be squeezed off and another test made.

This is R. L. Fisher's second deep wildcat in the area, his 1 Bradford, 29-7n-5e, having been abandoned as dry about a month ago. Definitely limiting the possibilities of extending this new field very far in a northerly direction, H. L. Hunt this week abandoned 1 Calvert, 2 miles to the north and located in SE NE 35-7n-6e. It was quit at 6,576 ft. with no shows found in the Wilcox section.


OFF AGAIN...ON AGAIN...
70 miles
in 8 hours
"At 8:00 p.m. we were just finishing up on W. P. Peckham's Cribb #1, 4300' well near Holliday, Texas in Wichita County," said Charles E. Hipp of Graham. "With our Bucyrus-Erie 36-L, it didn't take long to get away and we made good time on our 70 mile move to our next job. This was for the Falcon Oil Company on B. W. King's #2 near Graham, Texas in Young County. At exactly 2:00 a.m., we were all set on this new location, rigged up and swabbing mud in preparation for drilling the plug. In other words, it took only 8 hours to tear down, move 70 miles, and rig up. I certainly know of no other spudder as handy and fast on the move as this one.
"Incidentally, we completed the drilling of the 3000 foot King well in 36 hours; whereas with an ordinary rig on this type job, we would expect to take three full days."
Investigate these modern Bucyrus-Erie spudders. Their ability for high speed, all around performance on any type of work the future may bring, makes them a particularly good investment. And it is smart business to go into the strenuous times ahead with the most up-to-date and versatile equipment available today.
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Haynesville Deep Level Officially Opened

The indicated discovery well from the deep Pettit lime in the Haynesville field, Claiborne Parish, has been officially completed for a good well and is expected to stimulate a spirited drilling program to the deeper horizon. It is T. L. James 1 Aiken, NW NE 27-23n-8w, elevation 351 ft. Two weeks ago the casing was perforated from 5,431-40 ft. and the well tested dry. It was acidized and kicked off to flow at the rate of 12 bbl. hourly until shut in. This past week it was officially gaged for 288 bbl. daily, flowing through ¼-in. choke under casing pressure of 440 lb. and tubing pressure of 350 lb.

The hole is bottomed at 5,853 ft. with top of the Nacatoch at 2,060 ft., Saratoga 2,298 ft., Blossom 2,818 ft., base Blossom 2,854 ft., Glen Rose 4,031 ft., massive anhydrite 4,206 ft., base massive 4,408 ft., base anhydrite stringer 4,510 ft., James 4,950 ft., base James 5,060 ft., Pettit 5,412 ft., and porosity from 5,412-27 ft.

Wilcox Play Spurred By Wildcat Successes

As new discoveries continue to spur operators ahead, new wildcats mount in number each week. On top of the new strike in Catahoula Parish, and the still-testing discovery well in Rapides Parish, come new wildcat locations for Concordia, Rapides, and La Salle parishes. A new deep-lime exploratory test was staked in Union Parish in the northwest part of the state. These locations are as follows:

Concordia Parish: True Cauble 1 Gen. Am. Ins., SE NE 44-7n-6e (irreg.).
La Salle Parish: Carter Oil 1-A Catahoula, SW NW 5-6n-4e.
Rapides Parish: Carter Oil 1-B Catahoula, SW NE 32-6n-3e.
Union Parish: Carter Oil 1 Weldon unit, SE SE NW SW 19-21n-2w.

The Concordia Parish wildcat is 7 miles north of the new Catahoula discovery of this week and is in the extreme western part of the parish. The Rapides Parish test is 9 miles north and slightly west of the discovery in that parish and is exactly on the south shore of large Catahoula Lake. It is surrounded on three sides by wildcat failures to the 3,093-ft. level, the 3,602-ft., and the 5,000-ft. levels. These, however, did not test the deep Wilcox sands.

NORTH LOUISIANA COMPLETIONS

Wildcats

Catahoula Parish: Placid Oil 1 Calvert, SE NE 35-7n-6e, dry in Wilcox zone at 6,576 ft.
Claiborne Parish: (deep discovery in Haynesville field) T. L. James 1 Aiken, NW SE 27-23n-8w, elev. 351 ft., flowed 288 bbl. daily, perf. casing 5,431-40 ft., T.D. 5,853 ft., top Nacatoch 2,060 ft., Saratoga 2,298 ft., Blossom sand 2,818 ft., base Blossom 2,854 ft., Glen Rose 4,031 ft., massive anhydrite 4,206 ft., base massive 4,408 ft., base anhydrite stringer 4,408 ft., James 4,950 ft., base James 5,060 ft., Pettit 5,412 ft., porosity 5,412-27 ft.

Fields

Caddo, Caddo Parish: Magnolia 39 Doan-Thigpen, C S½ NE 6-20n-15w, 28 bbl. oil and 6 bbl. water, T.D. 1,519 ft.
State Line Oil & Gas 2 Caddo Levee Board, E½ NE SE 17-21n-16w, 10 bbl., T.D. 1,006 ft.
Texas Co. 56 C.M.L., NE NW SE 22-21n-15w, 56 bbl. oil and 10 bbl. water, T.D. 1,608 ft.
Little Creek, La Salle Parish: Ark. Fuel Oil 1 Martin Davis, SW SW SE 24-9n-1e, 15 bbl. oil, perf. casing 1,678-83 ft., T.D. 2,562 ft.
Placid Oil 15-A Tremont, NE NW 30-9n-2e, 44,000,000 cu. ft. gas, 34 bbl. water daily, perf. casing 2,538-42 ft., T.D. 2,708 ft.
Placid Oil 16-A Tremont, SW NW 30-9n-2e, 132 bbl. oil and 18 bbl. water, perf. casing 2,482-86 ft., T.D. 2,725 ft.
Nebo, La Salle Parish: H. L. Hunt 34-A Goodpine, SW NW 15-7n-3e, 139 bbl. oil and 46 bbl. water, perf. casing 3,760-64 ft., T.D. 4,083 ft.
H. L. Hunt 35-A Goodpine, NE NW 10-7n-3e, 162 bbl. oil and 3 bbl. water, perf. casing 4,033-36 ft., T.D. 4,014 ft.
Placid Oil 3 Couch unit, NE SE 29-8n-3e, 50 bbl. oil and 15 bbl. water, perf. casing 3,290-96 ft., T.D. 4,452 ft.
Harry Shulman 1 Walker, SW NW NE 13-7n-3e, dry at 4,600 ft.
Sligo, Bossier Parish: Triangle Drlg. Co. 3-B Skannal, SE NW NE SE 14-17n-12w, 70 bbl. oil, perf. casing 3,136-40 ft., T.D. 3,160 ft.
Sugar Creek, Claiborne Parish: Carter Oil 2 Coleman unit, NE SW SE SW 30-20n-5w, dry at 5,873 ft.

Urania, La Salle Parish: Ark. Fuel Oil 9-WA Urania. SE NE SW SW 2-9n-1e, 100 bbl. oil, perf. casing 1,498-1,501 ft., T.D.

AVERAGE DAILY PRODUCTION

NORTH LOUISIANA

	Nov. 29	Nov. 22
Caddo light	6,515	6,575
Caddo heavy	2,350	2,210
Cotton Valley	16,430	17,075
Cross Lake	2,640	2,550
De Soto and Red River	1,015	995
Haynesville	2,470	2,575
Homer	2,960	2,965
Lisbon	2,310	2,430
Little Creek	2,985	2,860
Nebo	5,165	3,915
Olla	14,050	14,160
Rodessa	13,125	13,210
Sligo	2,570	2,510
Sugar Creek	2,050	1,450
Urania	2,050	2,000
Zwolle	975	950
Total North Louisiana	81,575	81,955

SOUTH ARKANSAS

Atlanta	2,825	2,805
Buckner	2,405	2,310
Champagnolle	825	805
Dorcheat	1,900	1,810
El Dorado	1,360	1,400
Magnolia	18,950	18,905
Nick Springs	675	690
McKamie	2,575	2,375
Rodessa	1,165	1,200
Schuler	16,565	16,605
Smackover light	1,825	1,800
Smackover heavy	12,635	12,590
Troy	1,360	1,290
Urbana	2,750	2,735
Village	1,025	900
Total South Arkansas	74,070	73,360

MISSISSIPPI

Tinsley	73,950	78,475
Pickens	445	455
Total Mississippi	74,395	78,930

Arkansas' Smart Field May Be Extended East One Mile

A possible 1-mile extension to the Smart field of Ouachita County, held the interest in southern Arkansas the past week. The Stassi-Bourgeois-Stratton 1 Westley, NW SW 7-15-19, found 12 ft. of saturated sand in the Travis Peak section and cemented 5½-in. casing for completion attempts. Should commercial production develop, it would not only extend the area of the field but open a new and deeper pay level for the area. The hole is bottomed at 3,627 ft. with saturation reported between 3,485-3,500 ft. Lease and royalty trading has been active in the area for several weeks and is showing a decided increase around this new productive deeper discovery.

Promising Wildcat Junked; Rig Skidded

Several weeks ago the J. R. Lockhart 1 Newsome, SE NE SE 19-17s-13w, was hailed as a new discovery. However, collapsed casing and a crooked hole has forced its junking. The rig was skidded and a new hole will be drilled to thoroughly test the shows found. The Arkadelphia was topped at 2,123 ft., Nacatoch sand 2,337 ft., Saratoga 2,410 ft., base Saratoga 2,453 ft., Meakin sand 2,597 ft., Groves 2,682 ft., and oil shows were found from 2,597-2,614 ft., 2,919-27 ft., 2,960-66 ft., and 3,005-16 ft. and 3,515-20 ft. Total depth was 3,636 ft. Commercial production was believed assured from this well so the second attempt in the area will be very closely watched.

Discovery Area Gets Another Test

Several weeks ago Atlantic Refining Co. opened the Mount Holly field with a large discovery well from the Smackover lime in 15-17s-18w, Union County. It was completed for 251 bbl. daily, free from water, and was hailed as the most promising oil strike from the deep lime in some time. During the past week the first steps toward subsequent development were taken by the discovery firm. Atlantic staked its 1-B M. Davis, SW SW 10-17s-18w, a diagonal northwest offset to the discovery well. Drilling is to start at once.

In Little River County a new wildcat has been started at A. Gutowsky 1 Mills, SW SW NW 18-12s-29w, a surface-geology prospect, and is drilling below 402 ft.

ARKANSAS COMPLETIONS

Wildcats

Union County: J. R. Lockhart 1 Newsome, SE NE SE 19-17s-13w, junked and abandoned at 3,036 ft., top Arkadelphia 2,123 ft., Nacatoch sand 2,337 ft., Saratoga 2,410 ft., base Saratoga 2,454 ft., Meakin sand 2,597 ft., Groves 2,682 ft., oil shows from 2,919-27 ft., 2,960-66 ft., 3,005-16 ft., 3,515-20 ft.

Root Pet. 1 Loutre, SE NW 31-18s-14w, top Nacatoch sand 2,115 ft., dry at 2,213 ft.

Fields

McKamie, Lafayette County: Atlantic 8 Bodcaw, 100 ft. N of C NW 32-17s-23w, 4,096,000 cu. ft. gas, T.D. 9,340 ft.

Smackover, Union County: Gulf 34 Werner, SE SW

(Continued on Page 73)

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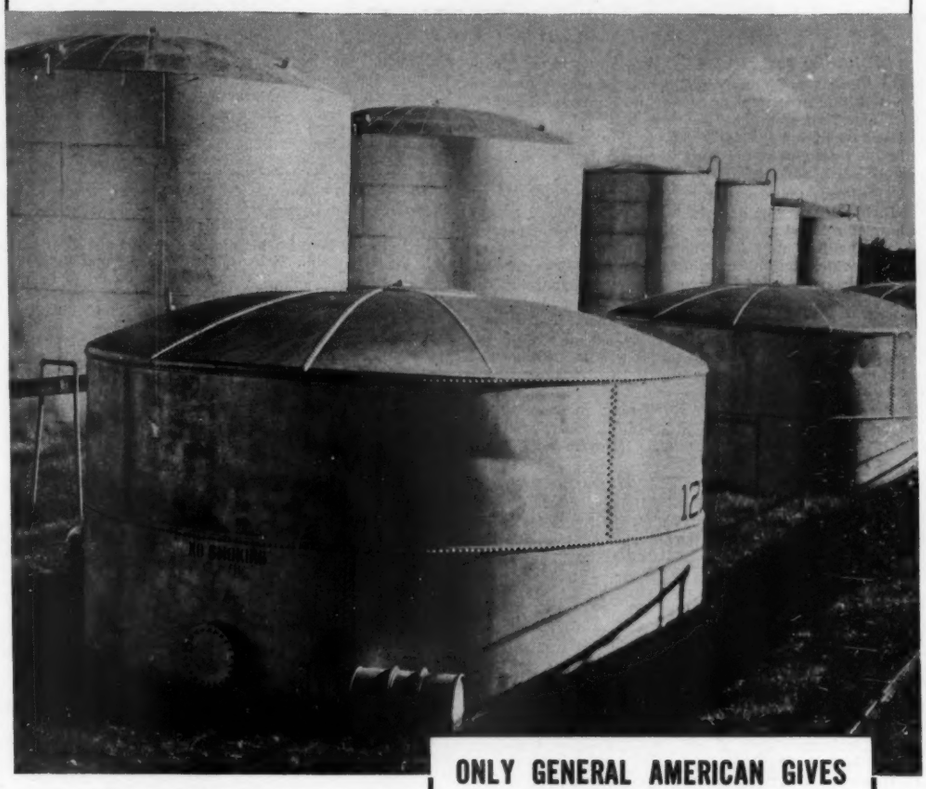

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Second Millar Ranch Test Makes Gas and Oil Spray

By TOM BARBER

MIDLAND, Tex., Dec. 1.—Three wildcats, one each in Pecos, Crane and Crockett counties, were reported this week to have encountered oil shows in drilling. Two of the wildcats are believed to be in the Ellenburger, lower Ordovician, section and are preparing to test. The third is drilling on toward contract depth.

The Pecos County prospect is Gulf and L. H. Wentz 2 L. H. Millar, which early in the week found a good show of oil and gas in the Ellenburger lime. Operator is withholding all information on the test except total depth, which has been announced as 4,363 ft. Unconfirmed reports credit the wildcat with topping the Ellenburger at approximately 4,190 ft. and logging almost 100 ft. of oil and gas pay section. A drill-stem test of the section recovered 3,500,000 cu. ft. of gas and a good spray of 45-gravity oil. Some water was also recovered but this was believed to be rotary fluid.

At the end of the week, operator set 7-in. casing at an unannounced depth, drilled plug and ran tubing to test. The well swabbed 46½ bbl. of 36.3-gravity oil in 19 hours and is now preparing for an acid treatment.

No. 2 Millar is located on a 7,000-acre block in the NW SE Section 43, Block 11, H.&G.N. Survey, 8½ miles northwest of the Taylor-Link field and 4½ miles south of Grivin. This location places it about 1½ miles northwest of Gulf and Wentz 1 Millar, which early in September found granite at 4,532 ft. and was a failure at 4,538 ft.

Sand Hills Outpost Testing Ellenburger Show

Nearly ¾ mile southeast of the Sand Hills Ordovician field, Humble 2-BX Tubb is preparing to acidize after failing to flow through casing perforations opposite a possible pay section in the Ellenburger lime. The Ellenburger was topped at 5,775 ft. and drilled to 5,788 ft. A 30-minute drill-stem test from 5,776-88 ft. recovered 150 ft. of oil and gas-cut mud.

Operator set 5½-in. casing at 5,788 ft., total depth, gun-perforated it from 5,776-87 ft. and ran 2-in. tubing to 5,772 ft. The test was washed and cleaned with oil in an attempt to initiate flow. Location is NE SW Section 19, Block 32, P.S.L. Survey, in the western part of Crane County.

In the Ordovician area south of the Sand Hills field, Gulf and Cranfill Brothers have completed 2-B Tubb, Section 28, Block B-27, P.S.L. Survey, a north offset to the discovery well in the area. On official gage 2-B Tubb rated a daily potential of 1,143 bbl. from 5,665 ft. after a 5,000-gal. acid treatment. Oil-gas ratio was 1,013-1.

Crockett County Wildcat Logs Show

Two miles northwest of the Henderson 1 Couch discovery well, Humble 1 J. W. Owens logged a sand section from 1,673-78 ft. with slight show of oil. Location of the wildcat is in the SW SE of Section 8, Block GG, H.E.&W.T. Survey. The Henderson discovery derives production from the Permian section at 2,180-86 ft. At the end of the week 1 Owens was drilling below 1,690 ft. toward contract depth.

New Wildcats Staked

During the week location was staken by Texas Pacific Coal & Oil Co. and Seaboard Oil & Gas Co. for a wildcat to be drilled in the northeastern part of Ector County, 9 miles north of Odessa and 3 miles east of the North Cowden field. The wildcat test will be 1 Augusta Barrow in the NE NE Section 16, Block 42, Township 1s, T.&P. Survey. Texas Pacific will be in charge of operations and will drill with rotary to 4,800 ft. unless production is obtained at a shallower depth.

One mile west of production in the northern part of the Apco-Warner field of Pecos County, Anderson-Prichard Oil Corp. and Magnolia have announced location of 1 Powell, a scheduled Ordovician wildcat. No. 1 Powell is located in the center of the W¼ of the W¼ of Section 98, Block 10, H.&G.N. Survey.

SOUTHERN WEST TEXAS COMPLETIONS

(24-hr. rating based on last 3 hr. of 6-hr. gage)

Wildcats

Culberson County: Perston W. Lewis 1 J. H. W. Neihaus, elev. 3,955 ft., dry at 3,658 ft., old well drilled deeper, old T.D. 3,507 ft.

Irion County: B. C. Mann 2 Read, elev. 2,178 ft., dry at 873 ft., top Clear Fork 856 ft.

Menard County: T. A. Hornaday 2 J. A. Leggett, elev. 2,081 ft., dry at 1,335 ft.

Reagan County semi-wildcats: Amerada 1-RC University, elev. 2,775 ft., dry at 2,790 ft.

Skelly Oil 1-G University, elev. 2,886 ft., dry at 3,129 ft.

Fields

Abell, Pecos County: Magnolia 2 Bowman, elev. 2,392 ft., 1,783 bbl., ½-in. choke, top detrital 4,895 ft., top McKee 5,204 ft., pay 5,243-53 ft.

Stanolind 1 Howell Johnson, elev. 2,397 ft., 420 bbl., ½-in. choke, top Simpson 4,860 ft., Tulip Creek 5,136 ft., pay 5,958-74 ft.

Stanolind 1 G. F. Simmons, elev. 2,381 ft., 194 bbl., ¼-in. choke, top Sharp sand 5,440 ft., pay 5,440-55 ft.

Dune, Crane County: Cities Service 6 University-Davis, elev. 2,566 ft., 60 bbl., pumping, 1,500 gal. acid 3,012-60 ft., old well drilled deeper.

Estes, Ward County: Gulf 163 Hutchins, elev. 2,682 ft., 2,493 bbl., 440-qt. shot 2,644-2,760 ft., T.D. 2,778 ft.

Foster, Ector County: Sinclair 25-D Johnson, elev. 3,032 ft., 1,863 bbl., 395-qt. shot 4,060-4,160 ft., T.D. 4,165 ft.

Hendrick, Winkler County: Gulf 192 O'Brien, elev. 2,714 ft., 218 bbl., 283-qt. shot 2,722-2,954 ft., T.D. 2,958 ft.

C. V. Lyman 4 Cowden, elev. 2,819 ft., 4,011 bbl., 1-in. choke, pay 2,813-30 ft.

Hoover, Crockett County: Roger Harris 1 Hoover, elev. 2,380 ft., 10 bbl., pumping, pay 1,952-71 ft., old well drilled deeper.

Johnson, Ector County: T. P. Coal & Oil 7 Johnson, elev. 2,968 ft., 398 bbl., pumping, 510-qt. shot 4,156-4,265 ft.

Jordan, Ector County: Sinclair 3-78 University, elev. 2,845 ft., 844 bbl., 1,000 gal. acid 3,626-35 ft.

McCamey, Upton County: Shell 15 Baker, elev. 2,612 ft., 518 bbl., 2,000 gal. acid 2,195-2,250 ft.

T. P. Coal & Oil 34-A Lane, 80 bbl., pumping, pay 2,185-92 ft., old well drilled deeper.

Noekle, Crockett County: J. S. Pittman 1 Bouscaren, elev. 2,320 ft., dry at 2,418 ft., top lime 2,240 ft.

North Cowden, Ector County: Snowden & McSweeney 2 Holt, elev. 3,092 ft., 397 bbl. oil and 22 bbl. water, 420-qt. shot 4,322-4,537 ft., T.D. 4,581 ft.

Stanolind and Magnolia 3 Holt, elev. 3,076 ft., 229 bbl., 885-qt. shot 4,420-4,720 ft., T.D. 4,734 ft.

Sand Hills Ordovician, Crane County: Gulf 16-A Tubb, elev. 2,539 ft., dry at 5,887 ft., top Ellenburger 5,857 ft.

Gulf 2-B Tubb, elev. 2,467 ft., 1,143 bbl., top Ellenburger 5,644 ft., 5,000 gal. acid 5,650-65 ft.

Sand Hills Permian, Ector County: Magnolia 8 Lea, elev. 2,653 ft., 747 bbl., 1-in. choke, pay 4,445-4,593 ft.

Taylor-Link, Pecos County: Cardinal Oil 1-3 University, elev. 2,642 ft., 15 bbl. oil and 15 bbl. water, 80-qt. shot 1,565-85 ft., T.D. 1,604 ft.

Toborg, Pecos County: Stanolind 21 Tippett, elev. 2,316 ft., 7 bbl. oil and ¼ bbl. water, pumping, pay 328-370 ft.

Stanolind 24-B Tippett, elev. 2,321 ft., 8 bbl. oil and 64 bbl. water, pumping, pay 334-411 ft.

Tide Water 1-T Smith, elev. 2,405 ft., 119 bbl. oil and 79 bbl. water, pumping, pay 505-507 ft.

First Production in Crosby County Indicated by Test

First commercial oil production for Crosby County may result from testing operations in progress at Callihan & Waggoner 1 E. M. Wahlenmaier. At the end of the week operators were considering an acid treatment for the well, which showed an estimated 4 or 5 bbl. of 39-gravity oil daily following a 140-qt. nitroglycerin shot from 2,900-30 ft.

No. 1 Wahlenmaier was drilled to 2,985 ft. and shot with 120 qt. from 2,980-85 ft. with no results. Operator then plugged back to 2,930 ft. and tried a second shot. The test was cleaned out and shut in for 12 hours, after which it made the estimated 4 or 5 bbl. of oil daily.

The wildcat prospect was drilled on a 5,000-acre block and is located 467 ft. out of the northeast corner of Section 3, Block 1, W.T. Survey, 20 miles southwest of Crosbyton. Nearest production is in the Justiceburg area of Garza County 15 miles to the south.

Wildcat exploration in the district suffered a setback as two important wildcats recovered salt water on last tests. In Lubbock County, L. C. Harrison and Tobe Foster 1 E. L. Steck, 3 miles west and slightly north of the Harrison 1 Nairn discovery, was drilled to contract depth of 5,500 ft. without finding any indication of oil recovery.

While drilling, 1 Steck reportedly encountered slight stains but last core, taken from 5,130-48 ft., recovered 16 ft. of lime and anhydrite showing sulfur water. The section is believed to be the Clear Fork of Permian age.

Location is 467 ft. out of the southeast corner of Section 7, Block A, John H. Gibson Survey, 2 miles northeast of Lubbock.

At the end of the week Trinity Drilling Co. 1 Dan Auld, Section O, Block E, E.L. Survey, Lynn County wildcat, was shut down for orders. No. 1 Auld was taken over by Trinity after being abandoned, cleaned out and casing set. A 30-minute drill-stem test from 4,958-5,207 ft. recovered 3,100 ft. of salty drilling fluid with no oil reported.

Wildcat Staked in Hockley County

A second wildcat venture for Hockley County was staked by Stanolind at 1 Victor J. Williams, 15 miles north of the Slaughter field. Contracted to 5,000 ft., the test is being made ready for immediate drilling. Location is in Labor 21, League 717, Capitol Survey.

NORTHERN WEST TEXAS COMPLETIONS

(24-hr. rating based on last 3 hr. of 6-hr. gage)

Wildcats

Borden County: Anderson-Prichard 1 Johnson & Clayton, elev. 2,912 ft., dry at 4,503 ft., top anhydrite 1,520 ft.

Mitchell County: Humble 1 Ellwood Farms, elev. 2,235 ft., dry at 8,002 ft., top Strawn 7,660 ft., Ellenburger 7,818 ft.

H. B. Ownby Drilling Co. 1 Morrison Oil & Royalty Co., elev. 2,188 ft., dry at 3,120 ft., top anhydrite 876 ft.

Fields

Iatan-East Howard, Howard County: Mid-Continent 1 L. C. Denman, elev. 2,252 ft., 146 bbl., pumping, 450-qt. shot 2,740-2,860 ft., old well drilled deeper.

Seminole, Gaines County: Amerada 7 Blakemore, elev. 3,413 ft., 608 bbl., ½-in. choke, 132-qt. shot 5,262-5,350 ft.

Continental & Carter 14-44 Langdon, elev. 3,527 ft., 988 bbl., 11,000 gal. acid 4,860-5,025 ft.

Shanon Ridge, Mitchell County: F. W. Merrich 4 E. T. Strain, elev. 2,276 ft., 80 bbl., pumping, 660-qt. shot 1,631-1,781 ft.

Slaughter, Cochran County: Honolulu 13-13 Igoe & Smith, elev. 3,656 ft., 855 bbl., 2-in. casing outlet, 10,000 gal. acid 4,989-5,046 ft., T.D. 5,052 ft.

George P. Livermore 18 Boyd, elev. 3,643 ft., 1,512 bbl., 15,000 gal. acid 5,008-5,050 ft.

T. P. Coal & Oil 1 N. H. Tarver, elev. 3,667 ft., 1,137 bbl., 3-in. casing outlet, 10,000 gal. acid 4,960-5,001 ft.

Slaughter, Hockley County: Devonian Oil 5 Mallett, elev. 3,625 ft., 1,438 bbl., 12,500 gal. acid 5,004-57 ft.

Honolulu 14-B Mallett, elev. 3,605 ft., 931 bbl., 2-in. casing outlet, 10,000 gal. acid 4,955-5,035 ft.

Honolulu 18-B Mallett, elev. 3,615 ft., 1,315 bbl., 2-in. casing outlet, 10,000 gal. acid 4,940-5,020 ft.

Magnolia 9-E Mallett, elev. 3,595 ft., 1,640 bbl., 3-in. casing outlet, 10,500 gal. acid 4,984-5,030 ft.

Magnolia 11-E Mallett, elev. 3,585 ft., 1,464 bbl., 3-in. casing outlet, 10,500 gal. acid 4,990-5,020 ft.

Magnolia 12-G Mallett, elev. 3,621 ft., 1,261 bbl., 3-in. casing outlet, 10,500 gal. acid 4,934-5,005 ft.

Stanolind 23-A Slaughter, elev. 3,512 ft., 1,256 bbl. oil and 4 per cent water, 2-in. casing outlet, 8,500 gal. acid 4,989-5,070.

Texas 2-C Mallett, elev. 3,620 ft., 1,819 bbl., 12,000 gal. acid 5,030-40 ft.

Texas 44 Slaughter, elev. 3,562 ft., 2,516 bbl., 11,500 gal. acid 4,963-5,055 ft., T.D. 5,075 ft.

Texas 51 Slaughter, elev. 3,550 ft., 1,386 bbl., 12,000 gal. acid 4,930-5,030 ft.

Texas 53 Slaughter, elev. 3,585 ft., 1,609 bbl., 12,000 gal. acid 4,950-5,010 ft.

Texas 56 Slaughter, elev. 3,562 ft., 1,869 bbl., 13,000 gal. acid 4,945-5,040 ft.

Texas 59 Slaughter, elev. 3,574 ft., 1,115 bbl., 12,000 gal. acid 4,930-5,010 ft.

T. P. Coal & Oil 3 Lauhoff, elev. 3,577 ft., 736 bbl. oil and 2 per cent water, 3-in. casing outlet, 10,000 gal. acid 4,940-5,001 ft.

T. P. Coal & Oil 5-B Ballett, elev. 3,610 ft., 1,137 bbl., 3-in. casing outlet, 10,000 gal. acid 4,965-5,030 ft.

Wasson, Yoakum County: American Liberty 4-A Bennett, elev. 3,587 ft., 520 bbl., 2 per cent water, ⅝-in. choke, 10,000 gal. acid 5,105-5,257 ft.

Continental 6-868 Kendrick, elev. 3,541 ft., 1,021 bbl., 12,000 gal. acid 4,975-5,115 ft.

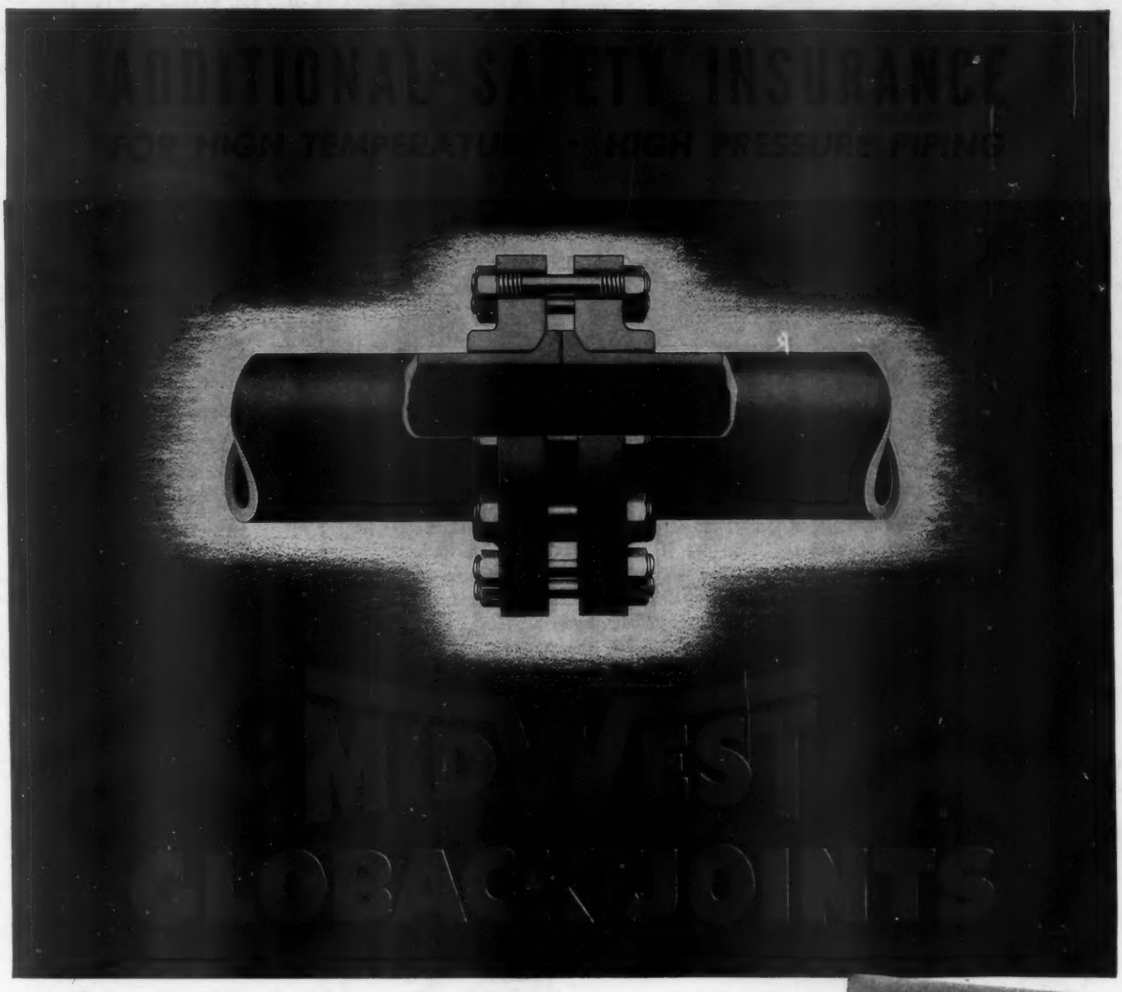
Drilling & Exploration No. 3-C Hudson, elev. 3,651 ft., 593 bbl. oil and 2 bbl. water, ⅞-in. choke, 8,000 gal. acid 4,900-5,100 ft.

Drilling & Exploration Co. 5-A Randall, elev. 3,663 ft., 668 bbl., ⅞-in. choke, 12,000 gal. acid 4,920-5,115 ft.

Trinity Drilling Co. 1 Josie L. Shanks, elev. 3,596 ft., 1,104 bbl., 10,000 gal. acid 5,200-43 ft., top San Andreas 4,610 ft.

Wildcat Staked Near Halfway Pool, New Mexico

HOBBS, N. M., Dec. 1.—A feature of Southeast New



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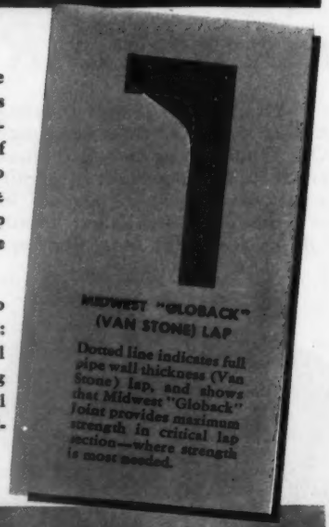
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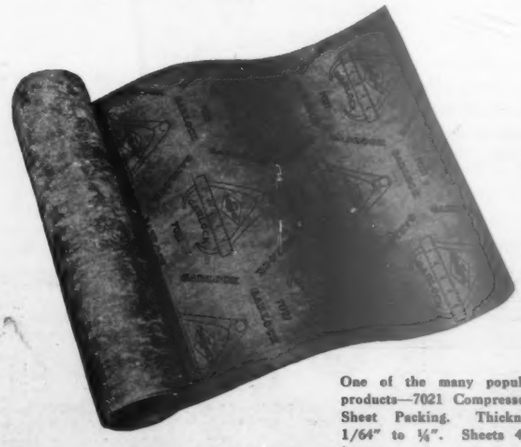

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Mexico development last week was the staking of a wildcat in west Lea County, 4¼ miles north of the Halfway pool. It was Culbertson & Irwin of Midland 1 Beulah V. Lynch, 660 ft. out of the SW cor. of 21-19s-32e. Addison Drilling Co., also of Midland, has contract to drill the well to 3,000 ft. for a test of the Halfway lime pay. Southern California Petroleum Corp. is associated with Culbertson & Irwin in the deal. Operators have a block of 3,040 acres.

West Lea Wildcat at 1,585 Ft.

Phillips Petroleum 1 Philmex, West Lea wildcat between the Vacuum and Maljamar pools, topped anhydrite at 1,375 ft. and at last reports had reached 1,585 ft. in anhydrite, red rock, and salt. It is in the NW cor. 28-17s-33e.

Discoveries Get Offset Wells

A half mile east of Sanders Brothers 1 Leonard, lime-pay discovery 2¾ miles north of the Grayburg pool in east Eddy County, Sanders Brothers et al have started 1 Etz, 34-16s-30e. At last reports the well was standing, bottomed at 525 ft. in salt, after cementing casing.

Sanders Brothers 1 M. W. Evans, 4-17s-30e, wildcat 2 miles north of Grayburg production, is drilling lime below 2,206 ft.

Van Welch will drill 1 State as a west offset to Nay Hightower 1 Grier, sand pool opener, 2¾ miles north of the Grayburg. The new test is 660 ft. out of the NE cor. 36-16s-30e.

Four Wildcats Active

A wildcat south of the Shugart area of Eddy County, P. B. English 1 Jones, 24-19s-31e, is drilling below 2,377 ft. in lime and anhydrite. With elevation of 3,554 ft. it logged base of salt at 2,230 ft.

Stroup, Yates & Flynn 1 Hartz-State, Eddy County wildcat northwest of Carlsbad and in 16-21s-23e, has passed 960 ft. in lime.

North of the Comanche area in Chaves County J. W Brown 1 State is drilling past 1,227 ft. in lime. It logged showing of oil in sand from 760-77 ft. amounting to 1½ gal. in 30 minutes. The test later struck slight showing of water in red sand at 910 ft.

Martin 1 Stephens permit, Chaves County wildcat in 22-15s-29e, is drilling below 3,797 ft. in lime.

NEW MEXICO COMPLETIONS

Fields

Maljamar, Lea County: Phillips 1-B Maljamar-State, 16-17s-32e, dry, T.D. 4,216 ft., slight shows of oil, water 4,198-4,203 ft.

Maljamar Oil & Gas 5-B William Mitchell, 20-17s-32e, flowed 300 bbl., lime 3,652 ft., T.D. 3,822 ft.

A. H. Hover 5 State, 32-17s-32e, flowed 160 bbl. through 2-in. tubing set at 3,700 ft., shot 3,940-4,130 ft., lime, T.D. 4,150 ft.

Salt Lake, Lea County: Harry Leonard and Van Welch 3 State, 18-20s-33e, pumped 110 bbl., lime 3,040 ft., acid, T.D. 3,100 ft.

Vacuum, Lea County: Phillips 46 Santa Fe, 4-18s-35e, pumped 96 bbl., pay 4,380 ft., acid, shot 4,380-4,500 ft., T.D. 4,600 ft. in lime.

Phillips 47 Santa Fe, 35-17s-35e, flowed 84 bbl. through 2-in. tubing, pay lime acidized 4,575-96 ft., tubing 4,593 ft., packer 4,171 ft., T.D. 4,596 ft.

TEXAS PANHANDLE

AMARILLO, Tex., Dec. 1.—Of the 19 wells completed in the district during the week, 17 were for oil and 2 for gas, with no dry holes. The 17 producers rated a daily potential of 3,426 bbl. and the gas wells tested 64,800,000 cu. ft. Hutchinson County led the field with nine completions; Gray County had six completions, and Carson and Wheeler counties two each.

During the week only 13 new locations were announced for the Panhandle district, a drop of 10 from the previous week. Hutchinson County received six of the total, Gray and Carson counties got three each and Wheeler County one. No locations were recorded in the busy Taylor and Davidson pools during the past week.

TEXAS PANHANDLE COMPLETIONS

(24-hr. gage)

Carson County: Cities Service 43-A Burnett, Sec. 53, Blk. 5, I.&G.N. Sur., 23,300,000 cu. ft. gas, pay 2,360-2,520 ft., T.D. 2,527 ft.

Texas 2 Byrum, Sec. 188, Blk. 3, I.&G.N. Sur., 162 bbl., pumping, 530-qt. shot 3,120-3,250 ft., T.D. 3,265 ft.

Gray County: Cree & Hoover 2 Davidson, Sec. 65, Blk. B-2, H.&G.N. Sur., 84 bbl., pumping, 265-qt. shot 2,895-2,985 ft.

Danciger Oil Co. 23 Powell, Sec. 28, Blk. B-2, H.&G.N. Sur., 766 bbl., pumping, pay 2,879-84 ft., T.D. 2,889 ft.

Phillips 3 Swanson, Sec. 87, Blk. B-2, H.&G.N. Sur., 415 bbl. pumping, 560-qt. shot 2,972-3,069 ft., T.D. 3,071 ft.

Stanolind 2 Lovett, Sec. 36, Blk. B-2, H.&G.N. Sur., 263 bbl., pumping, 290-qt. shot 2,938-3,034 ft., T.D. 3,036 ft.

Skelly 5 Taylor, Sec. 24, Blk. B-2, H.&G.N. Sur., 136 bbl., pumping, 397-qt. shot 2,835-83 ft.

Texas 5-F Taylor, Sec. 37, Blk. B-2, H.&G.N. Sur., 146 bbl., pumping, 420-qt. shot 2,789-2,867 ft., T.D. 2,869 ft.

Hutchinson County: Danube Oil Co. 9-A Sanford, Sec. 78, Blk. 46, H.&T.C. Sur., 206 bbl., pumping, pay 2,768-84 ft., T.D. 2,799 ft.
Gulf 9-C Cockrell, Sec. 2, Blk. M-21, T.C. Sur., 6 bbl. oil and 54 bbl. water, pumping, 660-qt. shot 3,000-3,150 ft., T.D. 3,195 ft.
Huber Oil Corp. 1 Bryan, Sec. 2, Blk. M-24, T.C. Sur., 59 bbl., pumping, pay 3,185-3,220 ft., T.D. 3,233 ft., old well drilled deeper.
Huber Oil Corp. 3 Herring, S. B. Evans Sur., 35 bbl., pumping, pay 3,065-3,145 ft., T.D. 3,214 ft., old well drilled deeper.
Phillips 88 Cockrell, Sec. 3, Blk. M-21, T.C. Sur., 115 bbl., pumping, 520-qt. shot 3,023-3,144 ft.
Texas 13 J. W. Moore, Sec. 21, Blk. M-21, T.C. Sur., 140 bbl., pumping, 290-qt. shot 3,090-3,155 ft.
Texas 39 Pond, Sec. 1, Blk. M-21, T.C. Sur., 108 bbl., pumping, 460-qt. shot 2,960-3,055 ft.
Parton & Holt 10 Whittenburg, Sec. 15, Blk. X02, H.&O.B. Sur., 102 bbl., pumping, 380-qt. shot 2,953-3,013 ft.
Shamrock Oil & Gas Corp. 1 Lucas, Sec. 6, Swisher Sur., 41,500,000 cu. ft. gas, 14,000 gal. acid 2,920-3,200 ft.
Wheeler County: Charlotte Oil Co. 3 Mitchell, Sec. 90, Blk. 13, H.&G.N. Sur., 100 bbl., pumping, pay 2,077-85 ft.
Magnolia 5 Koons, Sec. 43, Blk. 24, H.&G.N. Sur., 117 bbl., pumping, 85-qt. shot 2,380-2,432 ft.

Alberta, Oil Mining, Near Success, Delayed by Fire

(Continued from Page 60)

er oil. In September the daily average production of combined products reached 160 bbl.

Oil men began to speculate. Canada was pressing hard for more production and could probably dispose of all the oil it could produce from any source in the next few years. But there were other implications.

Tar Sands Favorable for Experimental Work

The process had been worked out under direction of one of the best qualified men in the world, Max W. Ball, geologist, mining engineer, oil-company executive, and author (This Fascinating Oil Business, 1940). Mr. Ball was well acquainted with the problems of producing and marketing oil and also with the problems of mining. With the unusually high yield of some 25 per cent by volume, the tar sands provided the most favorable area for pioneering in mining and extraction of oil, but if the process could be put into operation here, a start would be made toward perfecting similar processes to be used sometime in the far future at other places.

Oil mining from shallow reservoirs such as at Bellevue, La., are estimated to be profitable at a price of $2.25 a barrel for oil at the mine (The Oil and Gas Journal, January 28, 1937, p. 172).

Other engineers have even speculated on sinking a shaft 6,500 ft. under the Wilcox reservoir of the Oklahoma City field as a means of getting some of the hundreds of millions of barrels of oil that will be left in the sand even after other secondary recovery methods have been exhausted.

All of these developments of the future would be brought considerably closer if Max Ball and his associates could recover oil profitably from mined sands at present prices. Output of 160 bbl. a day from a pilot plant was significant. Final answer would come as soon as the tar-sand operations had become big enough to prove their feasibility as a large-scale enterprise, and that day might not be far off.

Last week, however, came another in a long series of delays at McMurray. Fire seriously damaged the separation plant, boiler house, blacksmith and machine shop, and laboratory of Abasand Oils, Ltd. Loss was estimated at $200,000. But this time it would be a matter of months, not years, before the fully insured plant could be rebuilt and put into operation again.

North Louisiana-Arkansas

(Continued from Page 69)

NW 5-16s-16w, old T.D. 2,255 ft., deepened to 2,600 ft., dry and abandoned.
Village, Columbia County: Bradham & Ragsdale 1 Threadgill, 1,320 ft. W and 2,360 ft. N of SE cor. 15-17s-19w, 720 bbl. daily, perf. casing 7,423-27 ft., T.D.

EAST TEXAS BORDER COMPLETIONS

Pine Island, Marion County: Livingston 1 A. T. Browne, 78 bbl., pumping, T.D. 2,308 ft.
W. M. Blackshear 4 Carrie Moseley, dry at 2,313 ft.

California Fields

(Continued from Page 67)

Western Gulf Oil Co. in the Oak Canyon district. This well, located on a property on which several dry holes have been drilled, was brought in flowing 25 bbl. per hour behind a small bottom-hole bean. Because operators do not make potential tests on an open-blow basis, the well will only be given an initial of 500 bbl., although it is capable of greatly exceeding this amount.

The hole was bottomed at 7,437 ft. and has 7-in. casing cemented at 7,436 ft. Due to the presence of some gray sand in close proximity to the oil sand the company secured production by gun perforating after the 7-in. casing had been cemented. A few days after completion the well began making some water and if this continues to increase the company may find it advantageous to effect a squeeze job.

AVERAGE DAILY PRODUCTION

	Nov. 29	Nov. 22
Wilmington	87,175	87,125
Midway-Sunset	42,025	46,010
Coalinga	39,975	45,750
Kettleman North Dome	39,925	39,675
Long Beach	39,250	38,875
Ventura Avenue	37,025	37,150
Huntington Beach	28,950	28,590
Dominguez	25,125	24,975
Santa Fe Springs	23,025	23,250
Santa Maria Valley	19,325	21,010

Castaic Wildcat Looks Good

In the Castaic region, Texas Co. has logged some promising showings in the Pliocene but not enough to justify the expectation of developing commercial production. This wildcat, at 5,700 ft., is still above the top of the Miocene and if the Pliocene showings continue down into the Miocene the company may have a new oil field in the offing.

COASTAL DISTRICT COMPLETIONS

Oak Canyon, Los Angeles County: Western Gulf Oil Co. 1 Wickham, 31-5n-17w, flowed 780 bbl., 27.6-gravity, 0.2 per cent cut, 500,000 cu. ft. gas, 20/64-in. bean, pressures 500/750 lb., T.D. 7,437 ft., perf. 7,273-7,428 ft., completed in lower Modelo zone of Miocene age.
Santa Maria Valley, Santa Barbara County: A. N. Macrate 4 Fernandez, 26-10n-34w, flowed 2,850 bbl., 16.2-gravity, 3 per cent cut, 60/64-in. bean, pressures on 16/64-in. bean 580/800 lb., T.D. 4,575 ft., perf. 3,921-4,574 ft., completed in Monterey zone of Miocene age.
Pacific West. Oil Co. 10 Hobbs, 21-10n-34w, pumped 480 bbl., 16.1-gravity, 3 per cent cut, T.D. 4,850 ft., perf. 4,490-4,847 ft., completed in Monterey zone of Miocene age.
Ventura Avenue, Ventura County: Associated 49 V. L. & W., 24-3n-23w, flowed 3,895 bbl., 32.2-gravity, 1 per cent cut, 3,767,000 cu. ft. gas, 38/64-in. bean, pressures 375/950 lb., T.D. 10,425 ft., completed barefoot 9,980-10,425 ft.

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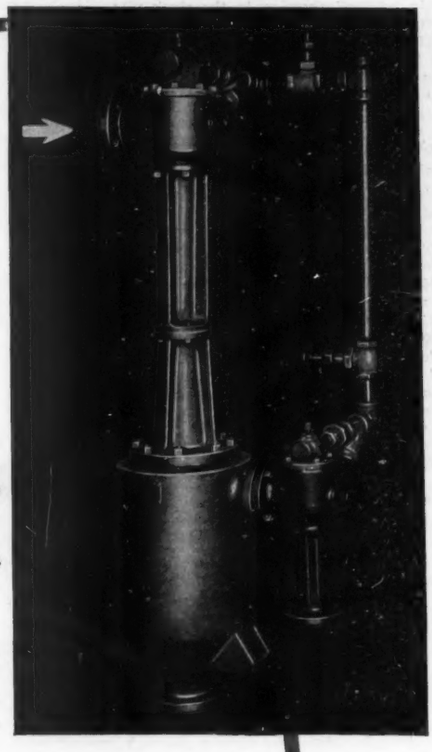

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Woodbine Oil Show Logged In Ellis County Wildcat

By D. H. STORMONT

DALLAS, Tex., Dec. 1.—The wildcat being drilled by Lee Miller and associates at 1 I. L. Griffith, James Blair Survey, in Ellis County, attracted attention last week when it encountered a slight show of oil in three Woodbine sand zones. The wildcat topped the Woodbine at 160 ft. and in drilling found three separate shows of oil around 350 ft. in the sand section. The test blew out between the second and third levels, with oil showing in the slush pits.

However, operator drilled ahead below 600 ft. No. 1 Griffith is contracted to the second Paluxy sand of the Trinity formation, expected around 1,000 ft., and may go deeper if structural conditions warrant. Location is on a 2,000-acre block 3½ miles west of Maypearl.

Hopkins County Test
Swabs Mud and Water

The possibility of oil production from the Paluxy sand at W. B. Hinton and Talco Asphalt & Refining Co. 1 Long, Acquier Survey, 3 miles west of Birthright in Hopkins County, lessened during the week.

Early in the week, operator perforated casing from 4,740-48 ft. and swabbed mud, wash water, a little oil and some gas on preliminary trials. As testing continued, the fluid became salty and rose to around 3,300 ft. from the top. After an overnight shut-in period, the fluid rose 500 ft. No. 1 Long is bottomed at 4,895 ft. with casing set at that depth.

As the week ended, operator had reperforated casing at 4,748-55 ft. and was preparing to install a pumping unit for further testing. The section being tested is reported to be the only one which indicated any promise of production.

Chapel Hill Area Extended
In Lively Play

The Chapel Hill Paluxy and Pettit lime gas-distillate pool of eastern Smith County is rapidly becoming one of the most active sectors in the eastern Texas district. This week, two important tests were completed and a third test was indicating the possibility of extending Pettit gas-distillate production 1 mile to the north.

An outside well on the southwest flank, Sinclair Prairie 1 Carothers, Andrews Survey, was completed to give the pool its best Pettit lime oil production. The well flowed 335 bbl. of 41-gravity oil in 24 hours, through ½-in. choke on tubing, through casing perforations from 8,284-8,312 ft. in the lower Pettit, with total depth of 8,345 ft. Oil-gas ratio was 547:1 and flowing pressure 900 lb. on tubing.

The largest gas producer for the Chapel Hill pool was completed at the same time by Chapel Hill Gas System at 1 Walton, John Parchman Survey. The pool's largest gas producer and probably one of the state's largest, 1 Walton, tested 240,000,000 cu. ft. of gas daily from the Paluxy sand at 5,779-5,835 ft., flowing through open casing. Later the perforations were squeezed off and the well flowed 253.66 bbl. of oil in 24 hours through ½-in. tubing choke, with oil-gas ratio of 480:1.

One mile north of production, Texas 1 Phillips, W. W. Hanks Survey, is showing for a gas-distillate extension. However, at the end of the week, operator was fishing for 150 ft. of tubing and swab line still in the hole.

Three Wildcats Staked

Three new wildcats in as many counties were announced for East Texas during the week. Scheduled to start a test by February 20, Navarro Oil Co. has taken a spread of leases amounting to 1,500 acres in the Harvis area of eastern Anderson County. The leases were taken from Martin Davey, Jr., and Joe A. Berry. No location has yet been made for the test.

At Cheneyboro in Navarro County, J. R. Bunn has spudded 1 L. C. Cooke in the upper John White Survey. The wildcat test is 7,000 ft. southeast of the northwest line and 1,200 ft. southwest of the northeast line of the survey.

In Wood County, the Hawkins area is in line for another Paluxy sand wildcat test. A failure in the Woodbine sand, Fred Strang 1 Sallie Lucy Old, J. R. Smith Survey, will be deepened from 5,301 ft. to 7,200 ft. In drilling to 5,301 ft., 1 Old logged the Pecan Gap from 2,955-3,105 ft., Austin chalk from 4,680-4,840 ft. and topped the Woodbine at 4,995 ft. Elevation is 462 ft. Drilling is scheduled to start December 15.

EAST TEXAS COMPLETIONS

Wildcats

Limestone County: B. F. Weekly 2-A W. C. Barron, E. Mabry Sur., 22 bbl. oil and 49 bbl. water, 1,370,000 cu. ft. gas, top Austin 2,478 ft., Woodbine 3,123 ft., Paluxy 4,222 ft., T.D. 5,782 ft.

Upshur County: O. J. Perrin 1 R. H. McClelland, Del Torres Sur., 5 mi. SE of Gilmer, dry at 3,975 ft., top Austin 3,678 ft.

George Sutton 1 W. B. Gorman, S. G. Slayton Sur., SW of Big Sandy, dry at 5,305 ft., old well drilled deeper.

Fields

Grapeland, Houston County: American Liberty Oil Co. 1 M. Howard, J. D. J. Procella Sur., 98,000,000 cu. ft. gas, pay 5,964-80 ft., T.D. 6,040 ft.

Hawkins, Wood County: Humble 2 G. B. Lynch, 132 bbl. in 6 hr., ¼-in. choke, pay 4,545-4,645 ft.

Pleasant Grove, Rusk County: M. D. Bryant 1 A. Ashby, George May Sur., 300 bbl. in 24 hr., ¼-in. choke, 15 per cent water, pay 3,988-4,086 ft.

Talco, Franklin County: Texas 22 H. C. Baker, I. Pennington Sur., 54 bbl. in 3 hr., pumping, pay 4,212-93 ft.

Old Bellevue Field Still Active Although in Stripper Stage

SHREVEPORT, La., Dec. 1.—The almost 40-year-old Bellevue field of Bossier Parish still claims a good portion of the North Louisiana drilling activity. The field was originally discovered and developed by the Standard Oil Co. interests, however, at present its production is almost wholly held by independent operators and small companies.

The majority of the production is from the Nacatoch sand at the 350-400 ft. level, but during the past few years several wells have been completed from the chalk at the 875-ft. level and one distillate producer has been completed from the relatively deep 1,784-ft. level. There is no proration or spacing in the field and it is definitely in the stripper class of production, however, it offers an example in economical shallow, stripper field management.

From two to six wells are being completed per month in this shallow field, some of the wells being only 100 to 150 ft. apart. All drilling is done with light weight spudders mounted on portable trailers for convenient moving. There are only a very few scattered derricks in the entire field. Almost every well is over-topped with a tripod made from three pine poles and this serves for all cleaning out and reworking practices on the wells. Rods are pulled from one to three times each month in each well and this takes from 45 minutes to 1½ hours unless some repair work is necessary, thus wells are not off of production for very long periods. All wells are pumped and both the geared and the band-wheel type installations are used, operating from central powers. The oil is pumped to large settling pits thence drained into steam-coil bottomed heating pits. From these pits it is pumped to large 200 bbl. treating plants or "hay burners" (being nothing but excelsior tanks), thence into the stock tanks. Under this procedure all tankage except final storage tanks is eliminated by the use of earthen pits.

There have been some experiments in previous years by several companies to determine the feasibility of installing water floods, gas or steam drives or gas repressuring projects, however, no work on any scale has yet been put in operation.

There are six operators in the field as follows: Arkansas Fuel Oil Co. has three leases with a total of 35 wells which make a monthly average of 4,300 bbl. of oil. C. H. French has two leases with a total of 11 wells which make an average of 860 bbl. per month. The largest operator in the field is Premier Investment Co. of Fort Worth, Tex., which has eight leases with a total of 104 wells making an average of 11,930 bbl. monthly. Tide Water Associated Oil Co. has two leases with eight wells making a total of 1,880 bbl. monthly. The Oil Finance Corp. operates one well with a monthly average production of 825 bbl. while the Stoval interests operate one lease with three wells making an average of 220 bbl. monthly.

Since the field is stripper production and has no allowable, proration or spacing pattern, records and statistics of the field's past performance are entirely lacking except in the hands of the various operators who have compiled records. For this reason little is mentioned of the Bellevue field except that drilling continues in the area.

Illinois Fields

(Continued from Page 62)

qt. shot 3,178-92 ft., Aux Vases 3,165 ft., saturation 3,284-3,201 ft., Ste. Genevieve 3,211 ft., pay 3,240-50 ft., T.D. 3,326 ft.

Texas 4 M. Lockwood, NW NE NE 14-6s-5e, flowed 181 bbl. oil and 12 bbl. water from Aux Vases and Levias, 25-qt. shot 3,209-27 ft., perf. 3,327-32 ft., 3,274-87 ft., 3,000 gal. acid, perf. 3,350-62 ft., Aux Vases 3,202-28 ft., T.D. 3,405 ft., P.B. 3,310 ft.

Magnolia 7 C. R. Sloan, NW NW SE 23-6s-5e, pumped 26 bbl., 20-qt. shot 3,123-31 ft., Aux Vases sand 3,115 ft., T.D. 3,136 ft.

Reward et al 2 S. Lockwood, NW NW NW 23-6s-5e, flowed 445 bbl., natural, Aux Vases 3,116-48 ft., T.D. 3,151 ft.

Cameron Oil 1-R Lockwood Comm., NE SW NW 24-6s-5e, flowed 363 bbl., 40-qt. shot 3,083-3,118 ft., Aux Vases 3,085-3,118 ft., T.D. 3,250 ft.

Sailor Springs, Clay County: Robinson 8 Tolliver, SE SW NE 26-4n-7e, pumped 23 bbl., 20-qt. shot 2,237-49 ft., Waltersburg 2,350 ft., Tar Springs 2,328½ ft., T.D. 2,370 ft., P.B. 2,350 ft.

St. Francesville East, Lawrence County: Sinclair and Midwest 2 Allstate Life, NE SE NW 22-2n-11w, pumped 24 bbl., 10-qt. shot 1,769-73 ft., 30-qt. shot 1,765-73 ft., Benoist 1,750-73 ft., T.D. 1,988 ft., P.B. 1,780 ft.

South Lawrence, Lawrence County: C. Evarts 3 Catt, SE SE SW 23-2n-12w, pumped 117 bbl. in 21 hr., Buchanan 1,299 ft., T.D. 1,317 ft.

West Centralia, Clinton County: McCullough et al 3 Coe, SE SW SW 14-1n-1w, dry at 1,451 ft., Glen Dean 1,103 ft., Benoist 1,440 ft.

Woodlawn, Jefferson County: Ruwaldt 1 Rynski, SE NW NW 35-2s-1e, pumped 175 bbl. oil and 50 bbl. water, 20-qt. shot 1,998-2,007 ft., 30-qt. shot 1,998-2,007 ft., Benoist 1,992 ft., T.D. 2,009 ft.

Kansas Fields

(Continued from Page 61)

West Silica, Barton County: C. E. Ash et al 1 Schlessiger, E½ NE NE 13-20-12w, dry, T.D. 3,454 ft., Arbuckle 3,429 ft.

Virginia Drilling 2 Selle, S½ SW SW 17-20-11w, pumped 3,000 bbl., Arbuckle 3,288 ft., 5-in. 3,288½ ft., T.D. 3,290 ft.

Stoltenberg, Ellsworth County: Magnolia 3 Skalicky, E½ SE NW 9-16-10w, pumped 3,000 bbl., Arbuckle 3,276 ft., 5-in. 3,277 ft., acid, T.D. 3,286 ft.

Virgil, Greenwood County: Shaffer & Howell, SE NW NW 15-23-13e, pumped 15 bbl. oil and 12 bbl. water, Bartlesville 1,592 ft., 6-in. 1,572 ft., T.D. 1,602 ft.

Wherry, Rice County: H. B. Garden 1 Engelland, NW NW NE 13-21-7w, dry, T.D. 3,470 ft., Mississippi 3,460 ft.

Zenith, Stafford County: Alf Landon 4 Volker, S½ NW SW 1-24-11w, pumped 75 bbl., Viola 3,695 ft., 5-in. 3,724 ft., acid, T.D. 3,747 ft.

Deep Rock 1 A. Crist, E½ SE SE 4-24-11w, flowed 2,400 bbl., Viola 3,748 ft., 4-in. 3,749 ft., T.D. 3,764 ft.

Gulf 2 Figger, E½ SE SE 9-24-11w, pumped 175 bbl. oil and 75 bbl. water, Viola 3,817-28½ ft., 7-in. 3,806 ft., T.D. 3,829 ft.

Stanolind 1 Sims, SW SW NE 11-24-11w, old well, old T.D. 3,756 ft. in Misener, T.D. 3,795 ft., Viola 3,756 ft., acid, flowed 3,000 bbl.

Alf Landon 6 Union Central Life, W½ SE SW 7-24-10w, flowed 3,000 bbl., Viola 3,729 ft., 5-in. 3,740 ft., acid, T.D. 3,766 ft.

Dines et al 4 Hunter, E½ NE NW 18-24-10w, dry, T.D. 3,799 ft., Viola 3,776 ft.

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Three 1941 Discoveries Are Removed From Proration

By ROBERT INGRAM

THREE oil fields opened in 1941 were removed from proration restrictions by the state Corporation Commission last week. All had turned out to be small fields. They were West Bethel in Seminole County, East Okemah in Okfuskee County and East Stroud Prue sand production in Creek County.

The West Bethel pool, opened by Paul McIntyre et al 1 Brown, 14-9-7, had three wells and was making an average of 125 bbl. a day. East Okemah, opened by Phillips 1 Jamie, 11-11-10, had eight wells and was averaging around 325 bbl. a day. The East Stroud Prue zone, which had a lively play during the summer after it was opened by Lewis Production Co. in 32-15-7, had dropped to around 900 bbl. a day from 28 wells.

Slight revisions were made in other fields of the state to set the allocation for prorated fields at 192,930 bbl. daily, a reduction of 4,595 bbl. from the October allowable, and raise the allocation to unprorated fields 4,595 bbl. to 235,070 bbl. (see p. 20).

Allowable of the Oklahoma City Wilcox zone, largest producing area in the state, was reduced from 73,500 bbl. to 72,000 bbl. daily. Quotas for the seven fields in Class B rating were unchanged to leave the class at 22,900 bbl. daily. The Fitts upper Simpson zone was cut 500 bbl. to 5,000 bbl., while other zones at Fitts were unchanged, for a total quota for the group of 9,500 bbl. daily.

Current allowable for the new Apache field of Caddo County was reduced from 3,000 bbl. to 2,550 bbl. daily. This decrease is due to accumulated underproduction which producers hope to clear by end of the year. Per-well allowable remains at 300 bbl. daily, with the exception of the discovery well which is getting 450 bbl. daily, part being "discovery bonus."

Cement field's allowable was reduced 2,000 bbl. to 14,000 bbl. daily, due, according to Joe J. O'Loughlin, conservation officer, to a bottleneck in the gathering system in the field. The East Cromwell extension zone, where differences were ironed out a month ago, was increased from 3,000 bbl. to 5,000 bbl. daily. East Cromwell proper was reduced 100 to 1,100 bbl. daily.

Allowable for the Hobart field was cut from 4,200 bbl. to 3,400 bbl. daily, although C. C. Cummings, purchaser of much of the oil there, has asked for an increase to 4,300 bbl. daily. Under the October agreement order, the wells are allowed 225 bbl. daily, on lease basis.

Dave Malernee's Rusk (Walnut Bend) field of Okfuskee County was granted a 400-bbl. increase to 1,200 bbl. daily; wells are allowed 200 bbl. daily, and they make their monthly allowables in 15 to 20 days.

Other changes in the unclassified group include:

Avoca field cut from 1,600 bbl. to 1,300 bbl. Dill pool, cut from 2,400 bbl. to 2,300 bbl.; South Dill cut from 400 bbl. to 300 bbl. West Hotulke Viola increased from 500 bbl. to 900 bbl.; West Hotulke Viola increased from 750 bbl. to 1,100 bbl. South Konawa cut from 1,900 bbl. to 1,500 bbl. North Little River increased from 300 bbl. to 400 bbl.; North Little River Hunton cut from 160 bbl. to 140 bbl. Oklahoma City dolomite cut from 300 bbl. to 225 bbl. Romulus pool cut from 2,000 to 1,600 bbl. North St. Louis increased from 1,300 bbl. to 1,800 bbl.

Coyle Wildcat Checks High

Eason Oil Co. and Halko Drilling Co. 1 Gobbel, SW NW NE 8-17-1, a wildcat in western Payne County near Coyle, set off lively trading last week when it became known that the well was checking higher than surrounding wells. At week's end the well was drilling at 4,851 ft., probably still in the Mississippi. Some reported tops were: Oswego, 4,385 ft.; Cherokee, 4,565 ft.; Inola, 4,720 ft., and Mississippi lime 4,815 ft. The top reported for the Mississippi would make the well about 50 ft. higher than the Stanolind-Amerada 2 Knight in the Langston area and about 100 ft. higher than two nearby dry holes.

Stephens County Campaign Revives Velma, Opens New Pool

Two wells are proving a new shallow area south of the old Woolsey pool in Stephens County, both being on the Baker lease in NE of 35-2s-6w. (See map, The Oil and Gas Journal, Nov. 27, 1941, p. 77.)

The Glenn Grimes, Fair et al 3-A Baker, NW SW NE of Section 35, had sand at 1,851-55 ft., set pipe and was shut down for more than a month; on initial test last week it was estimated at 100 bbl. daily. Same operators' 1-B Baker drilled to 1,839 ft. and on drillstem test flowed in 19 minutes. Oil in the two wells tests 28 gravity.

Skelly Oil Co. is pushing its campaign for shallow wells in the old Velma field, and Wednesday staked 2 Frensley, SW NW NW 36-1s-5w.

Skelly 1 Doaks, SE NE NW of Section 36, has completed for 2 bbl. a day; the 1 Frensley had sand at 770-817 ft., shot with 30 qt. and was cleaning out.

AVERAGE DAILY PRODUCTION
LEADING OKLAHOMA FIELDS

	Nov. 29	Nov. 22
Allen	4,050	4,125
Apache	3,000	2,900
Billings	6,250	6,300
Burbank	8,425	8,375
South Burbank	7,675	7,750
Balance Osage	18,050	18,200
Blackwell district	3,300	3,350
Bristow-Slick	6,300	6,250
Cement	13,750	12,550
Coyle	3,950	4,050
Crescent	1,450	1,400
East Cromwell	4,875	4,475
Cromwell	2,750	2,825
Cumberland	9,000	9,500
Cushing-Shamrock	8,850	8,825
Dill	2,350	2,400
Duncan	3,250	3,300
Edmond	3,325	3,300
Fish	3,575	3,950
Fitts	9,850	10,100
Jesse	1,975	1,950
Graham-Fox	2,000	2,025
Guthrie	3,500	3,325
Healdton	8,300	8,350
Hewitt	13,900	14,100
Keokuk	2,850	2,975
Konawa	975	1,025
Lucien	5,400	5,550
Moore	825	875
Northeastern counties	17,050	17,400
Oklahoma City	87,550	81,950
Olympic	1,550	1,600
Ramsey	4,550	4,600
Sasakwa	1,075	1,150
Sholem-Alechem	2,350	2,375
Stroud, East	1,550	1,500
Seminole district:		
Bowlegs	5,525	5,675
Carr City	2,075	2,100
Dora	1,150	1,225
Earlsboro	3,425	3,500
East Earlsboro	1,575	1,525
South Earlsboro	600	525
Little River	6,075	6,150
East Little River	625	550
Mission	1,175	1,150
Seminole	6,050	6,025
East Seminole	800	825
Searight	1,725	1,850
Total Seminole	30,800	29,100
St. Louis-Pearson	16,100	16,550
Tatums-Tussy	5,075	5,050
Wewoka	1,425	1,500
Yale-Jennings	3,325	3,350
Total Oklahoma	425,250	427,100

West Hewitt Work Continues Slump

Field work has shown a decided slump in the West Hewitt area of Carter County during the last month, and reports from the field are that leases are being crowded to make their allowables. Gibson & Jennings 9 Griffin, SW SE SE 20-4s-2w, was bottomed at 2,125 ft. and preparing to pump; the 12 Griffin drilled to 2,921 ft. and will test the lower sand zone. Company's 4 Lamb, NW NE NE of Section 20, was drilling plug at 2,247 ft., and the 8 Walker-Voorhees, SW NE NE of Section 20, was drilling below 600 ft. Several other wells were active and one was completed. (See completions.)

Second Wilcox Zone Pays At East Tecumseh

Atlantic Refining Co. was opening another second Wilcox pay zone in the "9n-4e" area of Pottawatomie County at 3 Lee, NW SW SE 16-9n-4e, the East Tecumseh pool.

Drilled to 4,850 ft. in the sand, the well swabbed 123 bbl. of oil and 9 bbl. of water in 18 hours; it continued to test. Atlantic opened this area with production in the Viola lime.

Phillips Petroleum 1 Homa, SE SW NW 16-9n-4e, was shut down for repairs at 4,435 ft.; it may deepen to the second sand zone.

OKLAHOMA COMPLETIONS

Wildcats

Coal County: Magnolia 1 Pope, SE SE NE 34-1-9, dry, T.D. 1,705 ft., coal 1,185 ft., sand 1,595-1,605 ft.

Comanche County: Texas 1 School Land-A, SW SE NW 13-3-10w, dry, T.D. 7,170 ft., Pontotoc 1,905 ft., Cisco 6,990 ft

Creek County: Elmer Adams 2 Goat, NW NW SE 31-18-11, pumped 25 bbl. oil and 3 bbl. water, 30 gravity, Tanner 2,164 ft., 6-in. 2,179 ft., *discovery*.

Okfuskee County: British American 1 Parsons, NE SE NE 36-12-9, gaged 4,000,000 cu. ft. gas, 1,160 lb. R.P., Cromwell 3,300-18 ft. and Hunton 3,775-85 ft., 7-in. 3,920 ft., acid, T.D. 4,053 ft., *discovery*.

Seminole County: Mico Oil 1 Kidd, NW SW SE 33-10-8, old well, old T.D. 3,767 ft., P.B. 2,160 ft., shot off 5-in. at 2,175 ft., set 5-in. at 2,145 ft., pumped 40 bbl., *discovery*.

Ramsey 1 Harjo, NW SE SE 24-6-6, dry, T.D. 4,174 ft., Wilcox 4,152 ft.

Fields

Allen district: Seminole County: Texas 5 Jefferson, SE NE NE 26-5-7, old well, old T.D. 2,750 ft., P.B. 2,331 ft., perf. 2,293-2,310 ft., pumped 5 bbl.

East Cromwell, Okfuskee County: Sunray 3 Miracle, NW NW SE 35-11-8, flowed 961 bbl., Cromwell 3,410-26 ft., 5-in., 3,410 ft., T.D. 3,426 ft.

Cumberland, Marshall County: Pure 3 Metz-105, SW NW NW 28-5s-7e, flowed 250 bbl., Bromide 4,628 ft., first sand 4,903 ft., 7-in. 2,910 ft., T.D. 5,043 ft.

Pure 6 Little-106, NE NE NW 34-5s-7e, flowed 119 bbl., Bromide 4,587 ft., first sand 4,880 ft., second sand 4,972 ft., pay 4,888-4,973 ft., 7-in. 4,888 ft., T.D. 4,973 ft.

Depew (extension), Creek County: Balph 2 Starr, NE SE SW 7-15-8, pumped 55 bbl., Wilcox 3,791-3,800 ft., 5-in. 3,738 ft., shot, T.D. 3,800 ft.

Dilworth, Kay County: West Virginia Oil & Gas 5 Fox, SW SW NE 19-28-1, pumped 110 bbl., Wilcox 3,331-49 ft., 5-in. 2,312 ft., T.D. 3,349 ft.

South Earlsboro, Seminole County: Amerada 5 Edwards, SW NE NE 22-9-5, old well, old T.D. 4,238 ft., P.B. 3,512 ft., Earlsboro 3,440 ft., perf. 3,360-3,425 ft., pumped 51 bbl.

Fish, Seminole County: Mid-Continent 8 Ferguson, SW NW NW 19-7-8, location abandoned.

Guthrie, Logan County: Sinclair Prairie 3 Sult, SW SE NE 7-17-1w, pumped 140 bbl. oil and 3 bbl. water, second Wilcox 5,414 ft., 7-in. 5,412 ft., T.D. 5,429 ft.

Continental 1 Metzger, SE SE NE 12-17-2w, flowed 123 bbl., Bartlesville 5,136-57 ft., 6-in. 5,516 ft., rip and shot, T.D. 5,542 ft.

West Hewitt, Carter County: Smith 6 Ward, SE SE SE 18-4s-2w, old well, deepened to T.D. 2,315 ft., 7-in. 2,045 ft., pumped 124 bbl.

S. & D. Daube 2 Merrick, NW NW SW 20-4s-2w, pumped 244 bbl., 7-in. 2,171 ft., 2½-in. 2,178 ft., T.D. 2,232 ft.

Hobart, Kiowa County: Sherman et al 1 Kelsey, NW NE SW 20-7-17w, pumped 83 bbl., Simpson 1,027 ft., T.D. 1,037 ft.

Hotulke, Pottawatomie County: Alma 2 Nadeau, SE NE 24-9-4, dry, T.D. 4,355 ft., Viola 4,276 ft., dense 4,328 ft.

Stanolind and Amerada 2 Bowling, SE SW NW 25-9-4, flowed 94 bbl., Hunton 4,125-46 ft., 5-in. 4,400 ft., perf. acid, T.D. 4,407 ft.

West Hotulke, Pottawatomie County: C. W. Sharp 2 Billington, SE SE SE 21-9-4, swabbed 350 bbl. oil and 25 bbl. water, Viola 4,480 ft., 5-in. 4,718 ft., perf. 4,486-4,520 ft., acid, T.D. 4,721 ft.

Keokuk, Seminole County: Carter 1 Aldridge, S½ SW NE 35-11-6, old well, old T.D. 4,111 ft., Hunton 4,114 ft., pay 4,098-4,125 ft., T.D. 4,125 ft., pumped 34 bbl. oil and 30 bbl. water.

Lovell, Logan County: Champlin Refining 1 McDaniel, E½ SE SW 16-18-4w, gaged 13,500,000 cu. ft. gas, R.P. 1,380 lb., sand 3,420 ft., 4½-in. 3,425 ft., T.D. 3,438 ft.

Oklahoma City, Oklahoma County: British American 1 School Land, NE NE SW 15-11-3w, old well, old T.D. 6,546 ft., T.D. 6,557 ft., P.B. 6,555 ft., pumped 250 bbl.

British American 6 Military, SE NW SW 34-12-3w, pumped 256 bbl. oil and 127 bbl. water, Wilcox 6,443 ft., pay 6,448-6,505 ft., 7-in. 6,448 ft., shot, T.D. 6,509 ft.

Romulus, Pottawatomie County: Barnsdall 5 Robertson, W½ SE SE 30-8-4, flowed 284 bbl., Hunton 4,293 ft., 5-in. 4,293 ft., acid, T.D. 4,319 ft.

St. Louis, Pottawatomie County: Oklahoma Oil 1 Bruno, SW SW NE 25-7-4, old well, old T.D. 4,192 ft., P.B. 3,925 ft., pumped 1 bbl.

North St. Louis, Pottawatomie County: S. K. Vierson 1 Aldridge, NE NW NW 27-8-4, flowed 420 bbl. oil and 4,000,000 cu. ft. gas, Hunton 3,917 ft., pay 3,932 ft., 5-in. 3,932 ft., acid, T.D. 3,952 ft.

Tecumseh Lake, Pottawatomie County: Hall-Jordan 4 Pensoneau, NW SW SW 36-10-3, pumped 70 bbl., Wilcox 5,227-33 ft., 7-in. 5,227 ft., T.D. 5,241 ft.

Velma, Stephens County: Rocket Oil 1-A Mitchell, SE NW SE 36-1s-5w, pumped 96 bbl., sand 757 ft., 6-in. 757 ft., T.D. 790 ft.

Skelly 1 J. T. Doak, SE NE NW 36-1s-5w, pumped 1½ bbl., sand 750-67 ft., 7-in. 750 ft., T.D. 864 ft.

Mudge 1 Broadbent, SE NW NW 1-2s-5w, pumped 20 bbl., shot 720-30 ft., T.D. 730 ft.

North Wewoka, Seminole County: Stanolind 3 Palmer, NW NW NW 33-9-8, dry, T.D. 4,463 ft., Wilcox 4,460 ft.

Miscellaneous

Le Flore County: Le Flore 47 Orr, NE NE NE 12-6-22, dry, T.D. 2,426 ft.

(Continued on Page 80)

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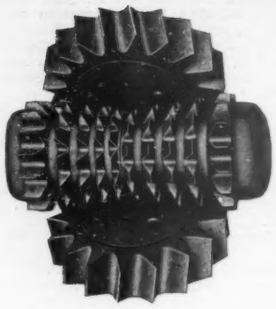

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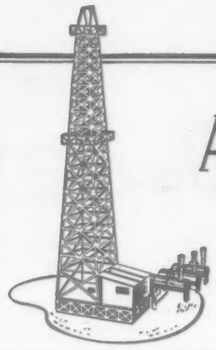

Among the Drilling

WYNN CROSBY Drilling Co., Houston, Tex., is preparing to test 1 Poole, a Wilcox test in the Lissie area, Wharton County, Texas. Total depth of the well is 10,777 ft., and 5-in. liner was cemented at 10,750 ft.

PHINNEY BROTHERS, Grand Rapids, Mich., have received contract to drill Clapsaddle & Harris 1 Duncan-Byrd-Killian, NE NE SE 24-1n-16w, Allegan County, Michigan.

ADDISON Drilling Co., Midland, Tex., is moving one of its cable-tool rigs to location for Culbertson & Irwin, Inc., 1 Buela V. Lynch, 21-19s-32e, Lea County, New Mexico.

LUPHER Drilling Co. has received another contract from Pure Oil Co. for 2 M. L. Richard, C N½ NE SE 19-18n-10w, Osceola County, Michigan.

GEORGE ECHOLS, Houston, Tex., is preparing to move a rotary to Central Louisiana, where location for a wildcat was made in Natchitoches Parish. Another operation is expected to be started on the Napoleonville dome, Assumption Parish, Louisiana, while in the Westwego field tentative location for a 5,600-ft. outpost has been made, but drilling is not expected to be started until after the first of the year.

CLIFFORD A. PERRY, Grand Rapids, Mich., contractor, has assigned tools to location for Gould & Cross et al 3 Amos Schafer, SW NE SW 18-3n-12w, Allegan County, Michigan.

TWIN Drilling Co., Tulsa, last week received contracts for three wells in the Reed City field, Osceola County, Michigan. Two contracts are for Pure Oil Co. wells and one is for Taggart Brothers Co.

GLENN H. McCARTHY, Houston, Tex., has reached a depth of 9,006 ft. in 1 Crawford, a wildcat in the Thornwell area, Jefferson County, Texas, and casing may be cemented for testing due to showings logged below 8,500 ft. Meanwhile, a rig is being assembled in the Magnolia field, Montgomery County, Texas, where locations for two wells recently were made.

PAUL DORAN, Vandalia, Ill., contractor, in association with Luttrell & Buell, is completing a wildcat operation in the Lone Grove Township, Fayette County, Illinois.

leases previously proven productive in the Reed City field.

ROWAN Drilling Co., Houston, Tex., is below 4,100 ft. in 1 W. H. Land, a wildcat in the S. P. Donley Survey, Chambers County, Texas. Another operation is expected to be started on the Danbury dome, Brazoria County, Texas, following completion of the company's 14 Jamison as a producing well.

A. E. KOPPRASCH, Allegan, Mich., has been awarded contract to drill Casinovia Development Co. 1 Morris Westcott, NW NW SW 22-10n-13w, a new Muskegon County, Michigan, operation.

PARKER Drilling Co., Tulsa, has received contract for Continental Oil Co. 1 J. C. Turner, NE SE NE 15-3s-4w, a wildcat test in Calhoun County, Michigan.

JOHN BLAFFER, Houston, Tex., is completing a second producer in the north-extension area of the Conroe field, Montgomery County, Texas. His 1 Butler is showing for a producer while testing sand at 5,079-82 ft.

O. W. DYER, Houston, Tex., is testing Atlantic 1 Foster Lumber Co., a Wilcox test in the Fostoria area, Montgomery County, Texas. Total depth is 11,974 ft. Production test is being made at intervals from 9,090-9,136 ft.

M. D. WELLS, Saginaw, Mich., has received contract to drill R. D. Malcolm, trustee, 2 A. Allen, SW SW NW 12-1s-14w, Van Buren County, Michigan.

ZEPHYR Drilling Co., Tulsa, is starting a wildcat test in Hamilton County, Illinois, 1 mile south of McLeansboro, Ill., on the Stephens farm in the E½ NW SW 22-5s-7e.

ALLEN & MORRIS, San Antonio, Tex., are preparing to start drilling operations on Slick et al 1 Grissom, a projected 7,500-ft. Wilcox test in the Caesar field, Bee County, Texas. In the Seeligson field, Jim Wells County, another producer is being completed for the Transwestern Oil Co. Five other active operations are reported throughout the district. They are in the Agua Dulce field, Nueces County, Texas, for the Texon Royalty Co., at the Lolita field, Jackson County, Texas, for Foster Petroleum Co., one in the Alta Mesa field for Standard Oil Co. of Texas, one in the Odem field, San Patricio County, Texas, for the Seaboard Oil Co., and another in Nueces County for the Phillips Petroleum Co.

H. C. WILLIAMS, Grand Rapids, Mich., has been awarded contract for Roy Wetmore 1 Henry Oetman, NE NE NE 29-3n-15w, Allegan County, Michigan.

HOUSH & THOMPSON Drilling Co., Houston, Tex., is preparing to start a wildcat in the Roesenberg area, Fort Bend County, Texas, for the Placid Oil Co., and is rigging up in the Hull field, Liberty County, Texas, for the Texas Co. Another rotary is engaged in La Fourche Parish, coastal Louisiana, where a wildcat is being drilled for Ernest Cockrell.

E. M. SHIELDS, Butler, Pa., has been awarded contract for P. J.

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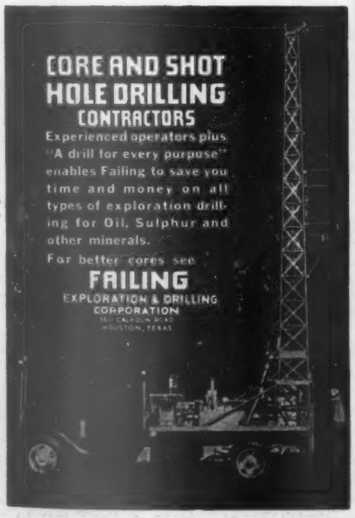
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Rodgers and W. V. Ingram 1 Jennie Ames, NW NW NW 23-19n-3e, Arenac County, Michigan.

NORMAN RUDMAN, Breckenridge, Tex., has staked 1 Tecumseh Pasture Co., 3 miles west of the Howsley-McCord pool in South Throckmorton County, Texas. The test is in the northwest corner of Comanche Indian Survey 21 and will be drilled to a depth of 1,000 ft. by cable tools.

ROSS ROBERTSON has received contract to drill 1 Webb, a wildcat project, 15 miles southwest of Electra, Wilbarger County, Texas. The location of the test is 1,780 ft. from the south and 467 ft. from the west lines of Section 8, Block 5, H.&T.C. Survey. It will be a 2,450-ft. test.

LUPHER Drilling Co., Reed City, Mich., this week received contracts for four new Pure Oil Co. operations in Lincoln Township, Osceola County, Michigan. All are locations on

TWIN Drilling Co., Mount Pleasant, Mich., has taken contract to drill Taggart Brothers Co. 29 Kalb-Moore-Witt, C E½ 18-18n-10w, Osceola County, Michigan.

JESS HEMBREE, Oklahoma City, Okla., has been awarded contract for D. E. Stimson's wildcat test in the NE cor. 29-9-9, Cleveland County, Arkansas. The wildcat test is on a block of 12,000 acres held by Mr. Stimson of Tyler, Tex., covering parts of Townships 9 and 10s, Ranges 9 and 10w.

A. B. RILEY, Kilgore, Tex., is rigging up rotary for Rogers Lacy 1 F. D. Brown, Jr., a mile north of Grogmore and 7 miles east of Jonesville in Concordia Parish, Louisiana. Contract calls for drilling to 5,500 ft., which operators believe will test the Wilcox.

JOE A. WORSHAM has made location for his 1 Gertrude Sewell, a 4,000-ft. cable-tool test 8 miles southeast of Jacksboro, Jack County, Texas. The test is located 467 ft. from the south and east lines of 160-acre tract in the Daniel Crenshaw Survey.

B. F. Drilling Co., Olney, Ill., appears to have opened a new field 1½ miles west of the Clay City field, Clay County, Illinois. The drilling company's 1 Nolan, 10-2n-7e, flowed oil into pits on a drill-stem test from McClosky lime at 3,070-82 ft.

FALCON-SEABOARD Drilling Co., Wichita, Kans., is proceeding below 4,100 ft. in a test for its own account and that of Darby Petroleum Corp., in Edwards County, Kansas, 1½ miles southwest of the McCarty gas field. The operation is on acreage farmed out by Deep Rock Oil Corp.

This daylight crew of Superior Oil Co. of California recently established a new drilling depth record for the Texas Gulf Coast district when they drilled 1-B McWhorter, in the Lake Creek field, Montgomery County, to 13,330 ft. Crew members are: E. J. Fruge, J. B. Hoffplauir, J. W. Guttry, C. W. Stanbaugh (driller), Joe Abel and L. H. Smith

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Oil Is Struck in Delacroix Island Distillate Field

By F. L. SINGLETON

NEW ORLEANS, La., Dec. 1.—The Delacroix Island gas-distillate field, Plaquemines Parish, was converted into an oil field last week with the completion of Texas 2 State which flowed at the daily rate of 451 bbl. of 36.3-gravity oil through a ⅞-in. choke. Working pressure was 1,475 lb. Total depth of the well was 10,522 ft., and production was from the Miocene sand through perforated casing at 8,965-70 ft. This was a few feet deeper than the discovery well which was completed in May as a gas-distillate producer from perforated casing at 8,915-25 ft. The well is located about ½ mile from the discovery well in 3-16s-14e.

In the same parish, located in the Delta Duck Club field, Texas Co. was running casing in 1 Delta Duck Club, located about ½ mile from the discovery well in 37-20s-20e. Total depth of the well is 11,091 ft., and it is assumed that the discovery pay at 10,750-10,802 ft., has been logged but details of the core record were not available.

Thornwell Wildcat Checking High

Cities Service 1 Lacassine, a wildcat located in the Thornwell area, Jefferson Davis Parish, is being watched with considerable interest as it is reported to be running 450 ft. structurally higher than Lisbon-Iberia Oil Corp. 1 Calcasieu National Bank, located in the Lakeside area several miles to the south. At the end of the week the well was coring in shale below 9,212 ft. with no shows of oil or gas reported.

Vinton Flank Strike to Be Recompleted

Union Sulphur 2 Gray, completed 2 weeks ago to open a new producing area on the southwest flank of the old Vinton field, Calcasieu Parish, is reported to be flowing 93 bbl. of oil and 15 per cent salt water and is expected to be killed and recompleted. The well was originally completed in the Oligocene sand at 3,605-14 ft. for an initial production of 185 bbl. per day through a 12/64-in. choke. The salt water is believed to be coming from other zones. The company has made location for a second test in the area, being 3 Gray in 4-11s-12w, a short distance from 2 Gray.

Test Started in Jug Lake Area

Location for an interesting wildcat was announced for Terrebonne Parish as Superior Oil Co. prepared to move in material to the Jug Lake area in 27-19s-15e. The well is located on the Laterre Land Co. tract. The company controls about 9,000 acres in the area which was leased on the strength of geophysical work. The location is several miles north of a deep test drilled in the area several months ago by Continental Oil Co.

West Mermentau Discovery Recompleting

H. M. Naylor 1 Acadia Development Co., the discovery well of the West Mermentau field, Acadia Parish, is reported to be flowing gas and distillate while testing through perforated casing at 9,119-25 ft. This well was originally completed in 1940 at 9,700-11 ft., but was recently killed and drilled deeper to a total depth of 10,490 ft., after production declined due to salt-water intrusion.

Erath Extended West

Another extension was marked up for the Erath field, Vermilion Parish, as Texas 1 Charles Burt, ½ mile west of production, flowed 100 bbl. of distillate daily through a 10/64-in. choke, while testing through perforated casing at 10,457-62 ft. As this well was being placed on production, Texas Co. prepared to test 2 Broussard after cementing 7-in. casing on bottom at 11,641 ft. An electrical survey showed eight sands at intervals from 9,882-11,641 ft.

North of production about 1 mile Phillips Petroleum Co. is moving in material for 1 Caldwell in 41-13s-4e, on a lease formerly held by Strake Petroleum Co. Two dry holes were drilled in this direction during the early stages of development but these can be discounted due to the deeper sands that have been found at depths below 11,000 ft.

Edgerly Flank Test Showing

On the southeast flank of the old Edgerly field, Calcasieu Parish, Gulf Refining Co. was preparing to test 2 Miller which may open deep-sand production for the structure. Total depth of the well is 9,184 ft. and the well was scheduled to be tested at 9,028-68 ft. where an electrical survey is reported to have showed favorable indications. Location is in 27-9s-11w.

Gibson Gets Extension

Shell Oil Co., Inc., extended production in the Gibson field, Terrebonne Parish, ¼ mile north with the completion of 1-A Realty Operators, Unit 4, which is flowing at the daily rate of 260 bbl. through an 8/64-in. choke from perforated casing in the regular field pay at 9,207-17 ft.

Two Deep Tests Are Abandoned

Texas Co. 1 Ledanois Land Co., located on the southwest flank of the Pine Prairie dome, Evangeline Parish, has been abandoned at a total depth of 10,000 ft. Slight showings were logged in sand at 9,100-9,200 ft. but an analysis of the sand failed to indicate commercial possibilities. This is the first deep test to be drilled in this area, since the opening of Sparta sand production on the east flank.

In St. Mary Parish Texas 1 State, a flank test to the Cote Blanche salt dome located in Vermilion Bay,

(Continued on Page 79)

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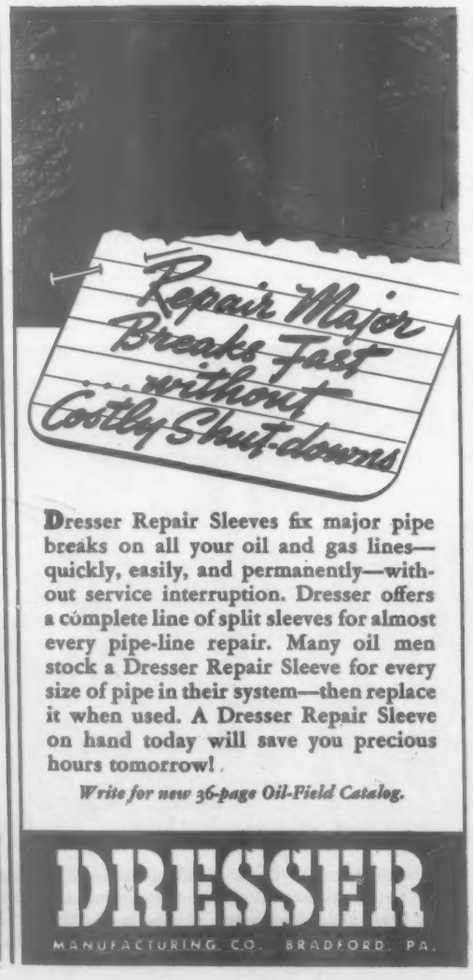
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Two Wells Near Completion At Indiana Two-Zone Strike

By STAFF CORRESPONDENT

EVANSVILLE, Ind., Dec. 1.—Carter 1 Maier, discovery well near Mount Vernon in N½ NE SW 1-7s-14w, has been put on pump and in its first test on pump yielded 300 bbl. of oil in 10 hours. In the last test prior to installation of the pump, the well swabbed 1,200 bbl. of oil in 24 hours. It is producing from two formations, the Cypress and Waltersburg sands. Carter 2 Maier, SE NE SW 1-7s-14w, north of the discovery well, is waiting on cement with surface casing set at 295 ft.

Sinclair 1 Hageman, N½ NW SE 1-7s-14w, is nearing completion after swabbing 70 bbl. of oil in 10 hours from the Cypress sand following a shot of nitro. The Waltersburg has not yet been tested at 1 Hageman. However, the test will be completed in two pays just as the discovery, 1 Maier.

Meanwhile, Sinclair-Wyoming has staked location for two more tests in the field. The new locations are 2 Hageman, SW NE SE 1-7s-14w, and 3 Hageman, NE NW SE 1-7s-14w.

Vanderburg Wildcat Dry in McClosky

Casing has been set at 1,645 ft. to test Waltersburg sand saturation at A. B. Settle 1 Bert Edmonds, SE SW NW 16-7s-11w, about 5 miles southwest of Evansville, in Vanderburg County. The test was drilled into the McClosky lime to a total depth of 2,562 ft. but no shows were found in that horizon and it was plugged back to the sand zone which showed saturation at 1,645-57 ft.

On a drill-stem test of the Waltersburg, 180 ft. of oil and 45 ft. of oil-cut mud were recovered in 1 hour, indicating the well has an excellent chance to open a new field.. It would be the nearest one to Evansville yet discovered.

New Tests Planned Near

Gibson County Discovery

Although R. D. Brown, Inc., 1 Harry Antell, a discovery well between Patoka, Ind., and Mount Carmel, Ill., is not yet a completion, several new tests have been planned for the area. No. 1 Antell, NE SE 20-1s-11w, is being pumped at intervals with a spudding machine. In one of its most recent tests it produced 110 bbl. in 10 hours. The productive zone is the McClosky lime at 2,259-63½ ft.

Among the new tests in the field Walter Miller 1 Hall, E½ NE SW 20-1s-11w, has cemented 130 ft. of surface casing and Brown 2 Antell, E½ NE SE 20-1s-11w, a north offset to the discovery, is rigging up rotary tools.

New Pay in Prospect for

New Posey County Field

Latest reports indicated that a drill-stem test would be made in the McClosky at Sinclair 1 Kleinschmidt, SW SW SE 12-7s-13w, offset to Haines-Thomas-Sloan 1 Scherer, recently completed as a pool opener in the Tar Springs sand. Sinclair topped the McClosky at 2,697 ft. at 1 Kleinscmidt and recovered 6 ft. of saturation in a core at 2,699-2,717 ft. The Tar Springs formation, productive at the discovery well, was dry at 1 Kleinschmidt. The field is approximately 3½ miles east of Mount Vernon.

INDIANA COMPLETIONS

Wildcats

Harrison County: Harrison County Dev. 2 Gleitz, SE NE NE 5-4s-4e, dry at 740 ft., Devonian 635 ft.

Huntington County: Ray Ash 1 Bretsford, NE SE SE 17-26n-9e, location abandoned.

Jasper County: Nat. Pet. 1 R. J. Stewart, NW NE NE 26-29n-5w, dry at 1,000 ft., Trenton 888 ft.

Fields

Bowman, Pike County: Ohio 15 Glodick, SE SE SW 31-1n-8w, pumped 12 bbl., natural, pay 1,037-1,105 ft., T.D. 1,573 ft., P.B. 1,103 ft.

Griffin, Gibson County: Continental 30 Keck, NE NW SE 27-3s-14w, pumped 68 bbl., 60-qt. shot 2,579-94 ft., Cypress 2,565-94 ft., T.D. 2,594 ft., P.B. 2,586 ft.

Trenton, Jay County: Portland Forge & Foundry 1 fee, SE NW SE NW 16-23n-14e, 50,000 cu. ft. gas, R.P. 85 lb., T.D. 1,005 ft.

Dixon et al 1 fee, NE NW NW 24-22n-13e, 25,000,000 cu. ft. gas, Trenton 1,002 ft., T.D. 1,005 ft.

OHIO

ZANESVILLE, Ohio, Dec. 1.—An outside test in Edinburg Township, Portage County, gives indication of being a failure. The East Ohio 1 S. W. Anderson logged the bottom of Big lime at 4,309 ft.; stray Clinton 4,429-44 ft., dry; red Clinton 4,444-82 ft., dry; white Clinton 4,482-4,511 ft.; show gas at 4,501 ft.; small show at 4,508 ft.; drilling in slate at 4,577 ft.

Perry County yields a fair gasser gaging 2,700,000 cu. ft., southwest of old Crooksville oil pool.

The Clayton Township oil pool in Perry County, again was the scene of several fair wells with one extension showing very light.

In Green Township, Summit County, on the Emanuel Franks farm, Section 15, Harold C. Bishop 4 had an open flow of 2,500,000 cu. ft. and should put better than 1,000,000 cu. ft. in the line, as it shut in around that figure. It had virgin rock pressure of 1,355 lb. in 21 ft. of Clinton sand at 4,330 ft., total depth.

OHIO COMPLETIONS

Athens County

Bern Township: Bern O. & G. Co. 2 Myron Keney, Sec. 11, dry, Maxon (water), T.D. 1,112 ft.

Carthage Township: Snyder 1 Charles Pennybacker, Sec. 17, show oil, shot, Berea, T.D. 1,770 ft.

Coshocton County

Pike Township: Allen Willey 2 Bert Ashcraft, small show oil, plugged, Clinton, T.D. 3,280 ft.

I. A. Stinson et al 2 B. C. Ashcraft, SE Sec. 14, dry, through Clinton sand, T.D. 3,280 ft.

Fairfield County

Berne Township: City Natural 1 A. Sullivan, Sec. 11, 70,000 cu. ft. gas, Clinton, T.D. 2,308 ft.

Knox County

Union Township: Prall Co. 1 George Smith, Sec. 4, small show oil, Clinton 2,689-2,704 ft., T.D. 2,755 ft.

Licking County

Mary Ann Township: Allen Willey 1 Frank Wince 590,000 cu. ft. gas, shot, Clinton 2,575-2,605 ft.

Preston Oil 3 Corkwell & Spencer, Lot 14, 5 bbl., shot, Berea, T.D. 874 ft.

Perry Township: Robinson et al 1 Elsie Scanlon, small show oil, Berea 723-33 ft.

Rutledge, Mossholder & Robinson 1 Ida and Elsie Scanlon, SE Sec. 8, dry, Berea, T.D. 750 ft.

Muskingum County

Harrison Township: Mehowa O. & G. Co. 3 H. C. Floyd, Sec. 11, 3,000,000 cu. ft. gas, Clinton 4,098-4,115 ft., T.D. 4,123 ft.

Noble County

Olive Township: E. O. Burbacher et al 1 Lee Davis, SE Sec. 2, ¼-bbl. pumper, Macksburg 300-foot sand, T.D. 265 ft.

Perry County

Clayton Township: Preston Oil Co. 1 Margaret A. S Shaw 125 acres, NE Sec. 8, 340 bbl. oil and 50,000 cu. ft. gas, Clinton sand, T.D. 3,309 ft.

Preston Oil Co. 1 Alfred Humphrey, SW Sec. 4, 12 bbl. oil and 10,000 cu. ft. gas, Clinton sand, T.D. 3,316 ft.

Palm Oil Corp., Inc., 4 Thurman Forgraves, SW Sec. 9, 155 bbl. oil and 50,000 cu. ft. gas, Clinton sand, T.D. 3,320 ft.

Harrison Township: Clyde Foraker 1 B. F. Thomas Sec. 29, 2,700,000 cu. ft. gas, Clinton 3,588-3,625 ft.

Thorn Township: B. C. Davis et al 4 William Starkey et al, NW Sec. 13, 100 bbl., Clinton sand, T.D. 2,740 ft.

Putnam County

Blanchard Township: M. Hubble 4 L. U. McCullough, Sec. 22, 5 bbl., shot, Trenton, T.D. 1,386 ft.

Stark County

Pike Township: Lyons et al 2 Garf Bachtel, Sec. 3, 850,000 cu. ft. gas, Clinton, shot, T.D. 4,787 ft.

Tuscarawas County

Jefferson Township: Brendel Prod. Co. 1 Charles Reif, Lot 13, 260,000 cu. ft. gas, Berea, T.D. 1,183 ft.

Washington County

Aurelius Township: Joseph R. Hall 59 Levi Hall, Macksburg Ridge, Sec. 31, 1 bbl., Buell Run sand, T.D. 415 ft.

Barlow Township: Campbell et al 2 James W. Ormiston, Sec. 11, 50,000 cu. ft. gas, Squaw, T.D. 1,512 ft.

Worthington & Tomkins 1 Charles D. Fogle, Sec. 11, dry, Maxon 1,242 ft.

Watertown Township: Waxler 1 James McDermitt, Sec. 14, 50,000 cu. ft. gas, shot, Berea, T.D. 2,087 ft. (old well deepened).

Independence Township: W. C. Patterson 9 David Worstell, Sec. 18, 1 bbl., Keener, T.D. 1,442 ft.

Wayne County

Sugar Creek Township: J. L. Skinner 2 J. A. Zuercher, Sec. 22, 400,000 cu. ft. gas, Berea, T.D. 842 ft.

Wyandot County

Antrim Township: Ohio Oil Co. 1 Bessie Chatlain, Sec. 28, dry, through St. Peter, top of Trenton 1,714 ft., T.D. 2,385 ft., 1,500 ft. water in hole, plugged.

EASTERN KENTUCKY

ASHLAND, Ky., Dec. 1.—One small gas well was completed in eastern Kentucky last week and field reports indicate that several other wells are near the completion stage. No new locations were reported but general activities continued on the same level as reported in the past week.

The "open" winter weather has aided drilling operations as few severe cold days have been recorded in this part of the state. The mercury has dropped to the freezing point only a few times and then rapidly staged a comeback. Field men indicate additional progress, especially in a number of newer locations because of the weather.

The Kentucky-West Virginia Gas Co. has completed well No. 5345 on the Gilbert Martin tract on the Bear Branch of Jones Fork in Knott County at a total depth of 2,923 ft. with an open flow of 84,000 cu. ft. of gas daily from shale.

WESTERN KENTUCKY

Daviess County

Pleasant Ridge district: C. E. Daugherty 4 Morgan Ashley, 5 bbl., 20-qt. shot, stray sand 693-98 ft., T.D. 708 ft.

Cane Run School district: Cumberland 16 W. E. Ivy, 5 bbl., 60-qt. shot, stray sand 583-605 ft., T.D. 615 ft.

Hancock County

Pellville district: McDonough Co. 1 D. H. Voyles, dry, T.D. 430½ ft.

Ohio County

Pleasant Ridge district: J. C. Miller 2 J. C. Westerfield, dry, T.D. 1,337 ft.

Pleasant Ridge School district: Henry Ogle et al 14 A. R. Renfrow, 10 bbl., 40-qt. shot, Jett sand 314-33 ft., T.D. 334 ft.

Sunnydale district: Lykins et al 7 Lee Lewis, 10 bbl., 30-qt. shot, Jett sand 462-69 ft., T.D. 474 ft.

Fordsville district: John Tuttle 4 Smith Miles, dry, T.D. 268 ft.

Louisiana Gulf Coast Fields

(Continued from Page 78)

topped salt at 9,220 ft., and the well was drilled to a total depth of 9,239 ft. where it was abandoned. This is the deepest test to be drilled on the structure. Cote Blanche is one of the few remaining nonproductive salt domes in the district.

Belle Isle Well Testing

In the same parish, and located on the Belle Isle dome, Sun Oil Co. was preparing to test a shallow sand logged in 2 Belle Isle, in 1-18s-10e. Total depth of the well is 6,623 ft., in salt, and 7-in. casing was cemented at 5,661 ft., preparatory to testing sand at 5,322-40 ft. Top of the salt was logged at 6,590 ft. Gas-distillate production was opened on this structure in April of this year at 9,830-70 ft.

LOUISIANA GULF COAST COMPLETIONS

Wildcat

Iberia Parish: Gulf 2 Pettit Anse Co., dry, T.D. 11,237 ft.

Fields

Bayou Blue, Iberville Parish: Superior 18 Schwing, 120 bbl., 8/64-in. choke, perf. casing 3,927-30 ft., T.D. 4,040 ft.

Chalkley, Cameron Parish: Shell 2 Hanzen, 201 bbl., 10/64-in. choke, sand 8,895-8,923 ft.

East Hackberry, Cameron Parish: Gulf 28-A Erwin, 454 bbl., ⅞-in. choke, perf. casing 10,080-90 ft., T.D. 11,667 ft.

Erath, Vermilion Parish: Phillips 1 Burt, 100 bbl., 10/64-in. choke, T.D. 11,688 ft., P.B. T.D. 11,172 ft.

Gibson, Terrebonne Parish: Shell 1-A Unit 4, 260 bbl. 8/64-in. choke, perf. casing 9,027-17 ft., T.D. 9,577 ft.

Grandison, La Fourche Parish: Texas 1-A La Fourche Basin Levee district, 1,000,000 cu. ft. gas, ⅞-in. choke, perf. casing 2,500-28 ft. and 2,460-90 ft., T.D. 11,495 ft.

Pine Prairie, Evangeline Parish: Pan American 2 Guillory, 300 bbl., 10/64-in. choke, T.D. 8,369 ft. P.B. T.D. 8,345 ft.

St. Gabriel, Iberville Parish: Shell 7 Gueymard, 248 bbl., 8/64-in. choke, perf. casing 8,594-8,654 ft., T.D. 8,658 ft.

George Echols 4-B Gueymard, 122 bbl., 8/64-in. choke, T.D. 8,653 ft.

Ville Platte, Evangeline Parish: Continental 3 Evangeline Securities, 142 bbl., 12/64-in. choke, perf. casing 10,042-80 ft., T.D. 10,084 ft.

Oil Investments, Inc., 2 Ortego, 264 bbl., 12/64-in. choke, perf. casing 10,067-82 ft., T.D. 10,118 ft.

TEXAS GULF COAST

Goodrich Discovery May Be Confirmed by Second Well

By NEIL WILLIAMS

HOUSTON, Tex., Dec. 1.—The Goodrich field, Polk County, opened the previous week by the Pan American Production Co., had prospects of its second producer as the company prepared to test 2-B Texas Long Leaf Lumber Co., 933 ft. northwest of the discovery well. Cockfield sand showing oil was reported to have been topped at 4,037 ft., and the section was cored to a total depth of 4,081 ft., where 5½-in. casing was cemented. The importance of this field was left in doubt when the discovery well, 1-B Texas Long Leaf Lumber Co., was officially completed for an initial production of 119 bbl. of oil and 47 bbl. of salt water daily, flowing through a ¼-in. choke. Based on top of the sand the well is reported to be a few feet structurally higher than the discovery well.

Fostoria Wilcox Still Testing

In the Fostoria area, Montgomery County, Atlantic Refining Co. continued to test 1 Foster Lumber Co., but the prospects of opening Wilcox sand production were not encouraging. With the hole bottomed at 11,974 ft., the well flowed salt water through perforated casing at 10,508-20 ft., and at the end of the week the well was testing through perforated casing at 9,090-95 ft., and at 9,126-36 ft. showing salt water and a small amount of gas.

Four Rigs Running at Lake Creek

Stanolind 1 WcWhorter, located in the Lake Creek field, Montgomery County, was drilling ahead in sand and shale below 10,953 ft., and is expected to drill below 12,000 ft. before a production test is made. In the meantime Superior Oil Co. and California Co. were starting two new wells, being 1-C McWhorter and 1 South Texas Development Co. This makes a total of four rigs operating in the field at the present time.

Lissie Area Wildcat Is in Wilcox; Stowell Well Testing

Another Wilcox operation that is being watched with interest is Wynn Crosby 1 Poole, a wildcat located in the Lissie area, Wharton County. Total depth of the hole is 10,770 ft., and a production test of the Wilcox is scheduled to be made after 948 ft. of 5-in. liner was cemented at 10,750 ft. This is a tight well, and details as to what showings were logged or where the well will be tested were not available. Location is near the town of Lissie in the A. J. Fry Survey.

In the Stowell area, Jefferson County, Glenn H. McCarthy 1 Crawford is bottomed at a total depth of 9,006 ft., where an electrical survey was being made. Broken sand with streaks of shale having an oil odor was topped at 8,550 ft., and three drill-stem tests were attempted at 8,550-85 ft., but all failed when the seat of the testing tool slipped.

Deep Development Under Way at Hull

Another deep-sand producer was added to the northwest flank of the old Hull field, Liberty County, as Texas 2 Armelin flowed 539 bbl. per day through a ¼-in. choke. Total depth of the well is 6,701 ft., and production is from perforated casing opposite oil sand at 6,290-6,305 ft., 6,250-70 ft., 6,340-70 ft., and 6,320-30 ft.

North La Ward Extended Northwest

Another major extension was being opened in the North La Ward field, Jackson County, as Magnolia 3 Gordon, 4,000 ft. northwest of the discovery well, was flowing at the rate of 3 bbl. of oil per hour through a $\frac{7}{32}$-in. choke while testing through perforated casing at 5,213-18 ft. Total depth is 5,223 ft. Casing pressure was at 975 lb., and tubing pressure 1,100 lb.

There is little doubt that the production will cover a large area, and future development is expected to follow a westward trend in view of recent developments which have defined the field to the northeast, south and southwest. Moore & Ahern 1 Bodet, about 5,000 ft. south of production, checked structurally low, and was completed for an initial production of 55 bbl. in 12 hours, flowing by meads through a ⅛-in. choke. Tubing pressure was 140 lb. About the same distance southwest, Gulfboard 1 Dickey is expected to be completed for a high gas-oil ratio well as it flowed gas with a spray of oil when tested through perforated casing at 5,216-20 ft.

Second Conroe Extension Well Coming In

In the north extension area of the Conroe field, Montgomery County, John Blaffer 1 Butler, is reported to be showing for a producer while testing through perforated casing at 5,079-82 ft. This is the second producer for the area recently opened ½ mile from production by the same operator. Location for several wells have been made, but none have become active.

Two Wildcats Staked

Brazoria County gained two important wildcat locations. South of the Mykawa field, West Production Co., staked location for 1 Cowell in the northeast part of Section 5, H.T.&B. Survey, a projected 8,500-ft. test, while on the Clemens dome, Shell Oil Co., Inc., is moving in for 6 Clemens Prison farm in the John McNeel Survey, about 807 ft. east of 5 Clemens farm,

TEXAS GULF COAST COMPLETIONS

Wildcats

Grimes County: Oswego 1 W. A. Boney, dry, T.D. 2,804 ft.

Brazoria County: H. A. Potter 1 L. A. McDonald, dry, T.D. 9,014 ft.

Pure 1 T. L. Smith, dry, T.D. 8,626 ft.

Fields

Clodine, Fort Bend County: Providence Oil Co. 2 Wing, 169 bbl., ⅛-in. choke, perf. casing 7,499-7,502 ft.

Danbury, Brazoria County: Rowan Drilling Co. 14 Jamison, 111 bbl. ¼-in. choke, T.D. 4,700 ft., P.B., T.D. 3,390 ft.

Dyersdale, Harris County: H. C. Cockburn 30 Burkett, 378 bbl., ¼-in. choke, sand 4,040-66 ft.

Goodrich, Polk County: Pan American 1-B Texas Long Leaf Lumber Co., 119 bbl. oil and 47 bbl. salt water, ¼-in. choke, sand and shale 4,030-50 ft.

Hull, Liberty County: Texas 2 Armelin, 539 bbl., ¼-in. choke, perf. casing 6,255-6,370 ft.

Lake Creek, Montgomery County: Superior 1-B T. A. McWhorter, 245 bbl., ¼-in. choke, perf. casing 9,778-98 ft., T.D. 13,330 ft.

Lakeview, Wharton County: G. D. Morris 1 Earl, dry, T.D. 5,633 ft.

Orange, Orange County: C. L. Brown 1 Wm. Winfree, 146 bbl., ⅛-in. choke, perf. casing 4,237-42 ft., T.D. 4,308 ft.

Orchard, Fort Bend County: Gulf 60 Moore, dry, T.D. 4,457 ft.

Pierce Junction, Harris County: Rio Bravo 38-A Settegast, 81 bbl., 11/64-in. choke, perf. casing 4,251-65 ft., T.D. 4,650 ft.

South Lake, Hardin County: Jack Taylor 1 Merchant, dry, T.D. 3,177 ft.

Oklahoma Fields

(Continued from Page 75)

Okfuskee County: Wells et al 7 Scott, NE NE NE 25-10-11, pumped 12 bbl., sand 2,106-33 ft., 5-in. 3,106 ft., T.D. 2,133 ft.

Okmulgee County: Brady 1-A Carter, SE SE SE 10-15-15, dry, T.D. 856 ft.

Allen 2 Wood, NE NW NW 25-14-12, pumped 2 bbl., 8-in. 683 ft., shot 2,025-30 ft., T.D. 2,030 ft.

Osage County: Stanolind 7 Osage, SE NW SW 17-27-8, pumped 32 bbl., Mississippi lime 2,468 ft., 5-in. 2,478 ft., shot 2,490-2,505 ft., T.D. 2,520 ft.

Cities Service 452 Osage, SE NE NW 24-26-10, gaged 2,400,000 cu. ft. gas, 860 lb. R.P., old well, old T.D. 1,886 ft. in Mississippi lime, T.D. 2,181 ft. in Arbuckle.

F. M. Pinney 9 Osage, W½ E½ SE 15-24-8, pumped 50 bbl., sand 2,251-2,312 ft., 6-in. 2,251 ft., T.D. 2,316 ft.

Norbla Oil 2 Osage, SE SE NE 19-23-10, flowed 210 bbl., Mississippi lime 2,499 ft., 5-in. 2,472 ft., acid, T.D. 2,504 ft.

Pawnee County: Brady & Sons 4 Stoneman, NE SW SE 28-20-9, pumped 25 bbl., Wilcox 2,718 ft., 6-in. 2,475 ft., shot, T.D. 2,728 ft.

Harwell & Burroughs 1 Isaacs, NW SW SE 25-20-6, dry, T.D. 2,187 ft., Wilcox 3,184 ft.

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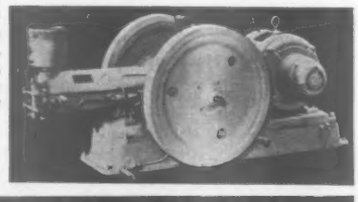

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ROCKY MOUNTAIN AREA

Drilling Revived in Oregon Basin by Black Oil Demand

By T. R. INGRAM

DENVER, Colo., Dec. 1. — The two largest completions for the week in the Rocky Mountain area were in the Oregon Basin black-oil field in Park County, Wyoming. The Husky Refining Co. 4-A Rosseau was completed for 240 bbl., and Enalpac Oil & Gas 1 Custer for 150 bbl. Both were flowing wells and are expected to do even better on the pump.

This field has been more active this year than for a long time, the increased drilling being credited to a better market for black oil. Oregon Basin is one of the larger fields in Wyoming, having around 9,000 acres inside of what is considered the productive area, but development has been rather slow on account of marketing conditions. In 1938 there were 39 oil wells in the field, about half of which were shut in for lack of a market. Although these wells had a potential of 15,000 bbl. daily, they were actually producing only 2,000 bbl. and no additional drilling was taking place. Early in 1940 the Yale Petroleum Corp. resumed operations in the field to increase its own production for its refineries. Three wells for an aggregate of 1,050 bbl. initial were completed during the year.

This year, however, operations were stepped up and with the completion of the two wells the past week the total for the year to date is 10 wells with an aggregate new production of 2,750 bbl. daily. Six of these were drilled by the Enalpac Oil & Gas Co., two by the Husky Refining Co., one by the Texas Co., and one by the Yale Petroleum Corp. Three wells are drilling. The production comes from the Embar-Tensleep horizons. Seven are on the south dome and three on the north dome. They were widely scattered throughout the field and at present the density of wells is around one well to every 300 acres.

Offset to Bunker Hill Tensleep Test Makes Gasser From Shannon

The Ohio Oil Co. 2 Brimmer, on the Bunker Hill structure in Carbon County, Wyoming, was completed for 2,500,000 cu. ft. of gas in the Shannon sand at 1,511-1,624 ft. Interest in the completion centers in the fact that it is an offset to 1 Brimmer, which is being drilled by the Superior Oil Co. of California as a test to the Tensleep at around 9,400 ft. This test has spudded.

Two Eastern Colorado Wildcats Hold Attention

Two wildcats in eastern Colorado are being closely observed. These are the Stanolind Oil & Gas 1 Snell in Kiowa County, near the Kansas line, drilling below 4,000 ft. and nearing its objective, and the other is O. E. Torrey 1 Whitson, near Kit Carson, Cheyenne County. While the Stanolind well had a considerable start ahead of the other, they are expected to run neck and neck in the home stretch. The first is strictly a wildcat exploring various horizons on the way down, while the second has a known objective at 4,900 ft. and will do very little coring until it reaches a critical depth.

COLORADO COMPLETION

Iles, Moffat County: Stanolind 19-M Parkinson, NW SW NE 22-4n-92w, T.D. 3,540 ft., plugged and abandoned after testing Sundance, old well in Morrison deepened from 3,462 ft.

COLORADO DRILLING REPORT

Cheyenne County: O. E. Terry 1 Elmer E. Whitson, C NW SE 12-13s-49w, set surface pipe and drilling ahead.

Huerfano County: Rheyn & Tomkins 1 Two Pines, SE SE 31-28s-69w, T.D. 1,500 ft., waiting on casing.

Sideman-White 1-X Martinez, C SW NE 33-26s-67w, cemented perforated string 6⅝-in. at 2,600 ft. to test Carlile and Apishapa.

Kiowa County: Stanolind 1 Snell, C SW SW 7-20s-41w, drilling 4,080 ft.

La Plata County: E. B. Klem 1 Olbert, NW SW 9-35n-12w, T.D. 4,290 ft., fishing tools.

Nick Spatter 1-X Bryce, C SW SW 31-33n-9w, drilling 4,475 ft. in sandy shale.

Las Animas County: Barney Oil 1 Dutto-Marchisio, NW NW 32-33s-62w, T.D. 1,610 ft., waiting on fishing tools.

Logan County: Mutual Oil 1 State, C SW SW 32-7n-51w, T.D. 4,840 ft., P.B. to sand at 4,480-96 ft., bailing and testing, probably will abandon.

Moffat County: Texas 13 Knowlton, NW NW NW 10-4n-91w, T.D. 4,701 ft., P.B. to 4,599 ft., perf. opposite Sundance, installing pump.

Privett & Spangler 1 Stillings, NE SE SE 12-5n-96w, drilling 2,140 ft.

Great Divide Petroleum 1 Wyatt, NW NW SE 6-9n-92w, S.D. 2,002 ft., orders.

C. R. Privett 1 Sutton, NE NE SW 1-5n-96w, T.D. 2,420 ft., straightening hole at 2,346 ft.

Stanolind 11-X Parkinson, CWL NE SE 22-4n-92w, T.D. 3,321 ft., cemented 7-in. 3,320 ft.

Rio Blanco County: Texas-California 8 Unit, NW SE NW 26-3n-9w, drilling 5,260 ft.

United Oil Producers 1 Hill, Lot 13, 6-1n-101w, S.D. 1,300 ft.

Desert Oil Co. 1 Rector, Lot 6, 35-2n-102w, spudded.

United Producers 2 Hill, CEL Lot 13, 6-1n-101w, S.D. 700 ft.

Burford Oil Co. 1 Government, C SW SW 16-1n-91w, T.D. 4,527 ft., set tubing 4,338 ft., bailing down to test.

Routt County: Elk River Co. 1 Fred N. May, C SE SE 34-8n-86w, drilling 450 ft.

WYOMING COMPLETIONS

Bunker Hill, Carbon County: Ohio 2 Brimmer, SE NW NE 32-27n-89w, T.D. 1,624 ft., top Shannon sand 1,511 ft., gaged 2,500,000 cu. ft. open flow.

Maverick Springs, Fremont County: Kirk Oil Co. 6 Tribal, NE NW SW 23-6n-2w, T.D. 1,632 ft., top Embar 1,344 ft., 6⅝-in. 1,485 ft., pumping 60 bbl. a day.

Oregon Basin, Park County: Enalpac Oil & Gas 1 Custer, NE NE SW 32-52n-100w, T.D. 3,465 ft., top Tensleep 3,294 ft., 5½-in. 3,299 ft., flowed 150 bbl. a day after acidizing with 1,000 gal.

Husky Refining 4-A Rosseau, NW SE SW 33-51n-100w, T.D. 3,702 ft., top Embar 3,635 ft., 8⅝-in. 3,676 ft., flowing 240 bbl. a day after acidizing, expected to do better on pump.

WYOMING DRILLING REPORT

Carbon County: Continental Oil 1 Frank M. Johnson, SE SE SW 1-24n-88w, drilling 3,667 ft. in shale.

Sinclair-Wyoming 27-A Wertz, CSL NW SW 6-26n-89w, drilling 3,930.

Sinclair-Wyoming 26-A Wertz, NW SE SE 1-26n-90w (Sweetwater County), drilling 5,552 ft.

Sinclair-Wyoming 1 Mary Carter, NE SE SE 31-25n-88w, T.D. 3,580 ft., water in top Sundance at 3,410 ft., cemented 9⅝-in. at 3,519 ft.

Glen Swartout 3 Union Pacific, NE NE SE 21-22n-78w, T.D. 942 ft., preparing to make formation shutoff at 870 ft. and test.

Sinclair-Wyoming 25-A Wertz, NW SE SW 6-26n-89w, drilling 5,563 ft.

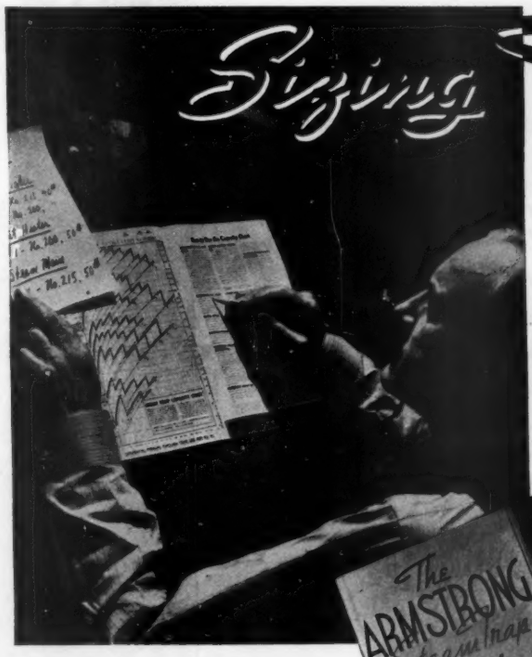
Sinclair-Wyoming 25-C East Ferris, SE SE NW 25-26n-87w, T.D. 3,994 ft., redrilling 3,112 ft.

Superior Oil 1 Brimmer, CWL NW NE 32-27n-89w, spudded.

Sinclair-Wyoming 3-A Mahoney, C NW NE 34-26n-88w, T.D. 524 ft., cemented 13⅜-in. 415 ft.

Fremont County: Indian Oil 4 Tribal, SW NW NW 23-6n-2w, cemented 12½-in. at 56 ft.

(Continued on Page 83)



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APPALACHIAN FIELDS

Deep Tests Hold Attention Despite One Abandonment

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Dec. 1.—Although one important test on a hitherto untested closure in West Virginia was dry in the Oriskany sand, other developments in the lower eastern fields offset this with reports of fair oil wells and gas wells in all areas. During the week, which was slightly retarded by the holiday being observed in neighboring states, 39 completions were reported of which 7 were dry, 19 gas wells and 13 oil producers with a daily initial of 1,119 bbl.

On Chestnut Ridge in South Union Township, Fayette County, Pennsylvania, New Penn Development Co., William E. Snee, et al were running casing in the test on the Carothers lease to a depth of 7,076 ft., but were having difficulty. Tools were run in the casing to clear whatever was holding them up. These operators are drilling 4 Heyn at 3,700 ft. and are fishing tools in 1 Kirby, lost at 6,691 ft. Greensboro Gas Co. is running 7-in. casing to 6,934 ft. in the test on the Barton estate.

Here Peoples Natural Gas Co. is drilling 4 Piedmont Coal Co. at 7,604 ft. and having difficulty with caving. In South Huntington Township, Fayette County, this company reached 5,480 ft. in the test on the Jacobs Creek Oil Co. lease.

In Richhill Township, Greene County, Natural Gas Co. of West Virginia was drilling the test on the Andrew Workman farm on the Washington anticline at 5,250 ft. In Beaver County, Saint Joseph Lead Co. skidded the rig and started a new hole in a deep test on the J. P. Hoehler heirs farm in Center Township. It is now drilling at 1,505 ft.

SOUTHWEST PENNSYLVANIA COMPLETIONS

Armstrong County

Cowanshannock Township: Watson et al 2 Theodore Smith, 242,000 cu. ft. gas; Bradford sand, T.D. 3,773 ft.

Parks Township: Apollo Gas 1 Gladys Mining Co., 48,000 cu. ft. gas, Bradford sand, T.D. 3,601 ft.

South Buffalo Township: Pittsburgh Plate Glass 1 Thomas Hill, dry, through Thirty-foot sand, T.D. 2,004 ft.

Clarion County

Red Bank Township: Kimmel Oil & Gas 1 James Carlys, 76,000 cu. ft. gas, Hundred-foot sand, T.D. 1,553 ft.

Fayette County

Nicholson Township: Greensboro Gas 1 Republic Collieries Co. 1,500,000 cu. ft. gas; Big Injun sand, T.D. 1,313 ft.

Duquesne Gas 1 Louise Johnson, dry, through Fifth sand, T.D. 2,587 ft.

Greene County

Morris Township: W. L. Walters et al 1 Harry Clutter, drilled deeper, dry, through Gordon, T.D. 2,760 ft.

Washington County

Amwell Township: Orrill et al 1 Belle Kelsey, 30,000 cu. ft. gas, Fifth sand, T.D. 2,905 ft.

Buffalo Township: Washington Oil Co. 5 John Snodgrass, 125,000 cu. ft. gas; gas sand, R.P. 150 lb., T.D. 1,435 ft.

Nottingham Township: H. B. Scott et al 1 William McNary, drilled deeper, dry, through Fifth sand, T.D. 2,975 ft.

West Virginia Wildcat Abandoned at 7,684 Ft.

On Chestnut Ridge in Morgan district, Monongalia County, Hope Natural Gas Co. drilled the important

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wildcat on the H. C. Greer et al lease through the Oriskany sand to 7,684 ft. and it was dry. The Corniferous lime was topped at 7,346 ft., Oriskany 7,570 ft. It will be abandoned. This again narrows the available areas for deep tests as this was a large and important closure on the anticline.

Gas Operations Strike Oil

In Grant district, Wetzel County, Carnegia Natural Gas Co. drilling 6 Mike Barr on which lease the oil rights are owned by the Hope Natural Gas Co. topped the Big Injun sand and but a short way in struck an oil pay and shut down for tankage. In a test a 100-bbl. tank was filled in 2 hours and the well was again shut in. The total depth was 2,355 ft. On this lease the eastern edge is operated for oil. About a mile to the northeast there are two gas wells. The area between is undrilled. To the southwest about ¼ mile a dry hole was drilled through the Bayard sand.

In Kanawha County, Columbian Carbon Co. completed 5 Homer C. Jones in Poca district in the Big lime at 1,626 ft. as an oil well with a daily initial of 400 bbl. after acidizing. This is the fourth oil well on this lease in the midst of the Oriskany gas field. An east offset to 3 Homer C. Jones was completed by the Virginian Gasoline & Oil Corp. on the J. A. Wines farm, a test, in the Big lime at 1,681 ft. which was showing for 30 bbl. a day before acidizing and which now appears as a large well after the first acid shot.

(Continued on Page 85)

Rocky Mountain Area

(Continued from Page 81)

Superior Oil Co. 1 Tribal, SW SE SW 15-3n-1w, drilling at unreported depth.

Continental 4 Shoshone Indian, CWL SE NE 1-6n-3w, drilling 490 ft. in pink shale.

Natrona County: Casper Creek Oil 1 State, SW SW NW 36-36n-81w, T.D. 2,732 ft. in sand, top 2,717 ft.

Iba Dev. Co. 1, C NE SE 25-32n-82w, drilling 1,825 ft.

General Petroleum 57-16-S, NW SW NE 16-35n-77w, Shannon sand 4,631 ft., installing pump.

K. S. Albert 1 Young, NE SE 25-32n-82w, T.D. 1,630 ft., cemented 5⅛-in. 1,590 ft., show oil.

Genetral Petroleum 3-21-G, NW SW NW 21-35n-77w, cemented 8⅝-in. at 227 ft.

Niobrara County: J. L. Berggren 1 fee, SE NW 23-35n-63w, drilling 2,780 ft.

Cow Gulch Oil 1 Nelson, C SE SW 19-35n-65w, T.D. 5,600 ft., swabbing through perfs. at 5,080-5,110 ft., show oil with water.

Park County: Stanolind 11-X Rosenberg, SE NE NE 26-58n-98w, T.D. 3,146 ft., top Embar 2,997 ft., Tensleep 3,050 ft., swabbed 6 bbl. per hr., installing pump.

MacKinnie Oil & Drilling 1 Northern Pacific, CNL NW NW 5-57n-99w, S.D. 2,460 ft. for orders.

Yale Petroleum 2-A Atherly, SW SW NW 33-51n-100w, coring 3,492 ft.

Yale Petroleum 3-A Frisby, NE SW NE 32-52n-100w, location.

Continental 2 Northern Pacific-2, NW SW NE 23-58n-98w, T.D. 3,447 ft. in saturated sand, 7-in. 3,382 ft., preparing to test.

Yale Oil Corp. 1 Government, NW SE SW 9-57n-98w, drilling 2,822 ft.

Continental 5 Northern Pacific-1, NW SE SE 23-58n-98w, rig, waiting on equipment.

Kirk Oil Co. 1 W. R. Coe, NE NW SE 27-50n-102w, cemented 15½-in. 190 ft.

Sublette County: Texas 2-J Government, NE SW SW 27-27n-113w, spudded.

North La Barge Oil Co. 3 Government, NW NE NE 17-27n-113w, drilling 1,991 ft.

Sweetwater County: Sinclair-Wyoming 8 Hughes, SW SW SW 2-26n-90w, drilling 4,012 ft.

Vermilion Oil 1 Government, SW NE NE 6-21n-99w, T.D. 2,280 ft., fishing.

Sinclair-Wyoming 104 Lost Soldier, C SW NW 11-26n-90w, rig.

Sinclair-Wyoming 103 Lost Soldier, SE SW NW 11-26n-90w, location, first report.

MONTANA COMPLETIONS

Bowdoin, Phillips County: Montana-Dakota Utilities 644 Robinson, C NW SW 15-32n-33e, abandoned at 556 ft. in Colorado shale.

Cut Bank, Glacier County: Texas 4 Willis, SW SE SW 18-32n-5w, T.D. 2,872 ft., 7-in. 2,807 ft., Cut Bank sand 2,787-2,857 ft. with shale break at 2,815-30 ft., main pay 2,837-57 ft., swabbed 35 bbl. first 20 hr., preparing to shoot with 100 qt. at 2,837-57 ft.

Texas 10 Morrison, C S½ NW 22-35n-6w, T.D. 2,930 ft., 7-in. at 2,825 ft., Cut Bank sand 2,865-2,908 ft., main pay 2,917-28 ft., swabbed 125 bbl. first 24 hr.

Texas 4 Lindquist, CNL NW 20-32n-5w, T.D. 2,837 ft., 7-in. at 2,787 ft., Cut Bank sand 2,765-2,806 ft., main pay 2,799-2,806 ft., swabbed 127 bbl. first 24 hr.

Glacier Production 4 Corrigeux, CWL NW 21-33n-5w, T.D. 3,000 ft., P.B. to 2,982 ft., 127 ft. of 5⅛-in. liner set at 2,960 ft., good show oil in Sunburst at 2,900-10 ft., Cut Bank 2,958-81 ft., show oil and gas in lower Cut Bank at 2,875-81 ft., but most of oil coming from Sunburst, 400 ft. of fluid after shot, will put on pump for test.

MONTANA DRILLING REPORT

Blaine County: Independent Natural Gas 1011 Miller, SE SE SE 8-31n-19e, drilling 1,100 ft.

Carbon County: R. C. Tarrant 2 McKay, C SE NW 4-6s-18e, drilling 3,960 ft. in sandy shale, top Chugwater 3,060 ft.

Fallon County: Carter 1 Northern Pacific, C SE SW 19-4n-62e, T.D. 9,678 ft. in schist at 9,654 ft., cemented 7-in. at 8,822 ft., test throug perf. at 8,320-50 ft. and 8,395-8,410 ft., packer at 9,311 ft., tester open 4 hr. 15 min. filled up 4,680 ft., 40 per cent oil, 60 per cent water, perf. with 10 holes at 6,825-29 ft., 6,162 ft. fluid of which 4,030 ft. water, balance oil and water, still testing.

Garfield County: H. H. Schwartz, Jr., No. 1, SW SW NW 26-15n-30e, drilling 550 ft. shale, 8¼-in. 60 ft.

Glacier County: William Hanlon 3 Tribal-196, SW NW NE 30-32n-5w, rig.

Texas 4-B Government, C SW SW 17-32n-5w, drilling 900 ft., top Colorado 590 ft., 10¾-in. 626 ft.

Texas-Miller 1 Morgan, 660 ft. S, NE cor. 32-33n-5w, drilling 1,500 ft., top Colorado 630 ft., 10¾-in. 649 ft.

Lawler-Hoer 2 Clarkson, SW SW SW 9-33n-5w, drilling 520 ft.

R. C. Tarrant 1 Lenoir, SW SW NW 17-31n-5w, ready to spud.

Santa Rita 15 Tribal, SW SE NE 3-35n-6w, cemented 10¾-in. 690 ft., top Colorado 660 ft.

McDonald, Henderson, Overcash 3 Tribal-190, SW NE NW 29-32n-5w, drilling 2,220 ft., 1,000 ft. water from sand at 2,185-2,220 ft.

R. C. Jeffries 2 Tribal-197, SW SW NW 30-32n-5w, standing, 8⅝-in. cemented 2,438 ft., water sand at 2,410-33 ft.

Hill County: Montana Gas 2 fee, NE NE NW 24-32n-17e, drilling 476 ft.

NORTHWEST NEW MEXICO COMPLETION

Hospah, McKinley County: Petroleum Products 18 State, SE NE SW 36-18n-9w, T.D. 1,702 ft., 50 bbl. in 24 hr. from Hospah sand, top 1,665 ft.

NORTHWEST NEW MEXICO DRILLING REPORT

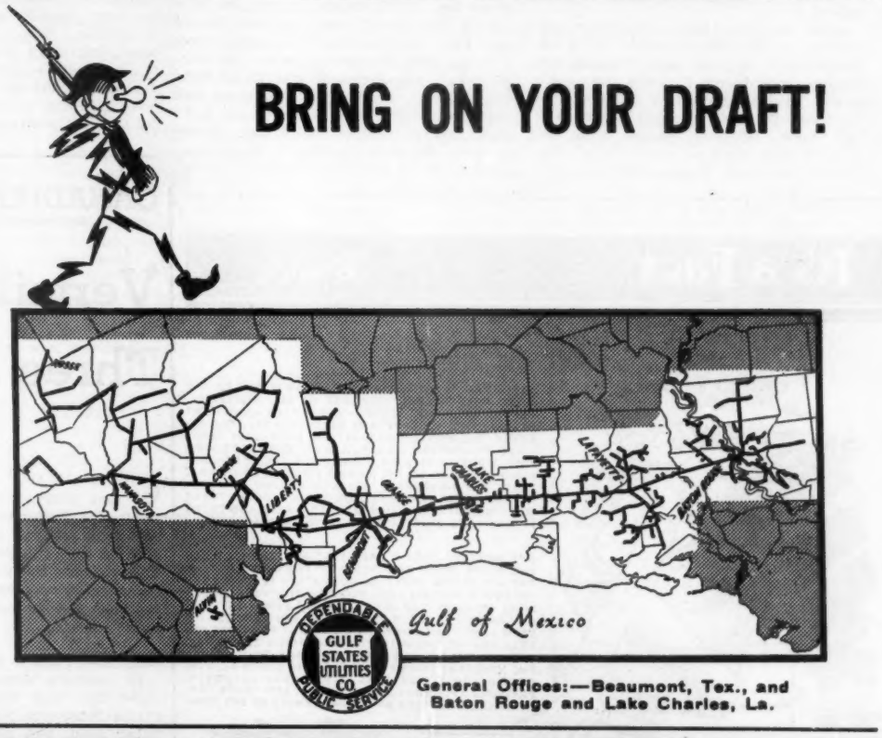
McKinley County: Petroleum Products 19 State, SW SE 36-18n-9w, drilling 1,350 ft., first report.

Ambrosia Investors 1 Santa Fe, NE NE SW 3-14n-10w, drilling 530 ft. in 10-in. hole.

San Juan County: Southern Union Production 3-B Government, C NW SE 20-29n-11w, cemented production string at 1,690 ft.

Torrance County: Cardinal Oil 1 State, SE SW 3-8n-14e, T.D. 1,140 ft., 8¼-in. frozen, running 6⅝-in.

J. P. Stewart 1 Lamon ranch, C SW NE 3-3n-12e, T.D. 765 ft., sidetracking bit.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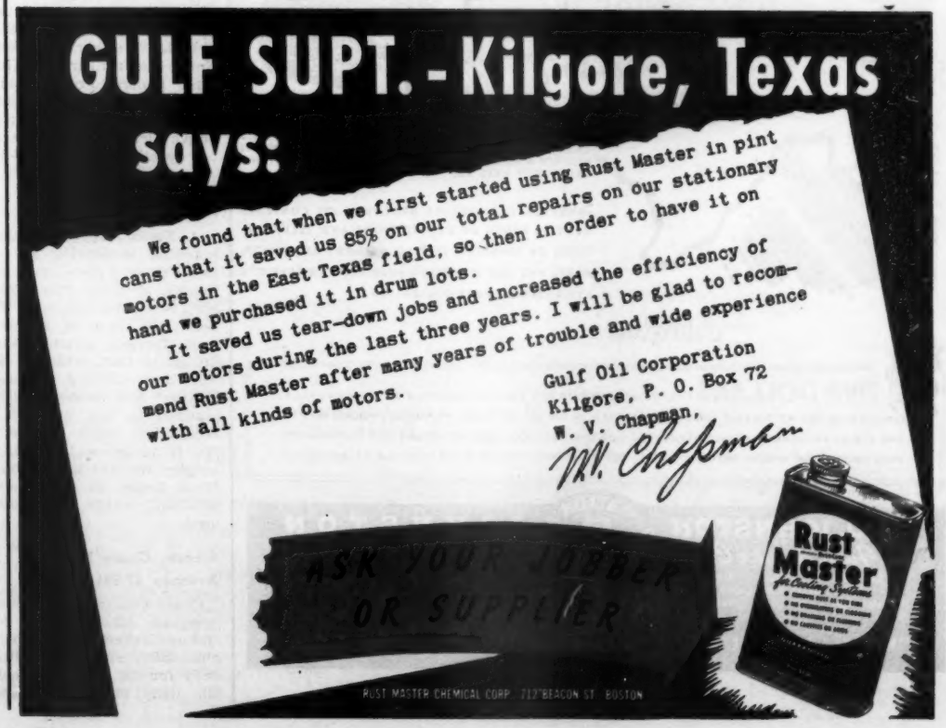
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It saved us tear-down jobs and increased the efficiency of our motors during the last three years. I will be glad to recommend Rust Master after many years of trouble and wide experience with all kinds of motors.
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RUST MASTER CHEMICAL CORP. 712 BEACON ST. BOSTON

MICHIGAN OPERATIONS

Biggest Roscommon Well Brought In; Operations Up

By OTTO C. PRESSPRICH

SAGINAW, Mich., Dec. 1.—Aiming to get set for winter, and possibly hoping to obtain steel priorities for some exploration, Michigan oil and gas operators last week took out 57 drilling permits from the state Conservation Department, the number being the largest for any week this year and probably the largest since permits were first required.

From an operations standpoint, completion by Pure Oil Co. of its B-1 State-Roscommon in the new Roscommon County development featured the week's news. The well came in a gusher which produced 184 bbl. of crude in the first half hour. Officials classed it as the best of four gushers which have been brought in since Eugene Hilliard's discovery well last summer. Completed in the Traverse lime at 3,346 ft., in Section 34, the well is a north offset to a Freeman Oil Co. gusher.

Success of the Pure well improved prospects for most of the dozen other tests now drilling in the county.

Offsetting a dry hole, the third thus far in the proven Reed City field, was Pure Oil Co. 2 Brock in Section 20, which flowed 195 bbl. the first hour and Gulf Refining Co. B-2 Jewett, Section 31, good for approximately 100 bbl. an hour. The dry hole was Welch Oil Co. 1 Nedel, Section 21. Operators in the Reed City field, which now has about 90 producing wells, kept their eyes on the Cook-Voorhees 1 Kremmin, Section 8, of Lincoln Township. The test rates as an important extension possibility as it would open an entire new section.

Roscommon County

Test to Deepen

In Richfield Township, Roscommon County, Sun Oil Co. 1 Bauman wildcat had a production test scheduled at near 4,200 ft. Sun's 1 Hunt wildcat in Lake Township ran into water in the Dundee around 3,350 ft. It is planned to drill deeper.

Three Wells Planned

Near Isabella County Strike

Michigan Devonian Petroleum Co. success in the old Chippewa field of Isabella County will result in more development there. The Devonian 1 McNeil-Davis, in an area which in its heydey had few big wells, was reported still to be producing better than 20 bbl. an hour pinched in its second week of production. The well is in Section 3, producing from the Traverse at 3,058 ft. It offsets a smaller producer and a dry hole. Michigan Devonian plans a west offset to its big well, Daily Crude Oil Co. will make another test two locations south, and at least one other operation is indicated for the immediate future.

Southwestern Area Revived

Only three dry holes were among the 22 completions reported in Michigan oil fields during the past week. Of interest was the continued success of tests in Hopkins Township, Allegan County, where one well was gauged at 380 bbl. the first 22 hours and another 32 bbl. in 2 hours.

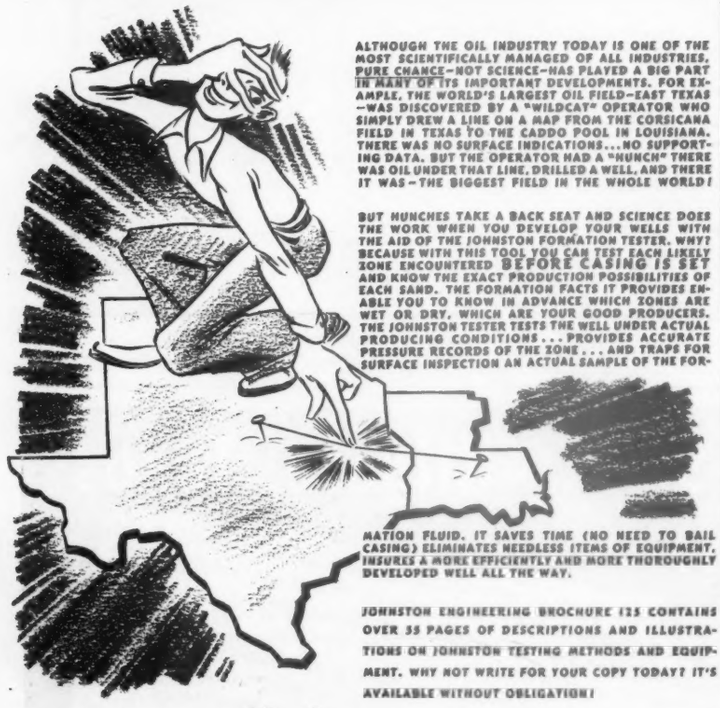
Also adding to attention on the old southwestern Michigan front was Clapsaddle & Harris wildcat in Section 19, Lee Township, Allegan County. That test was reported to have produced 25 bbl. of oil, plus some water, daily, after acid treatment. Van Buren's Bloomingdale Township sector had five completions, all small wells with salt water lessening their value. A wildcat test in Geneva-Van Buren was dry.

Four Gas Wells Completed

Natural-gas resources for the state were increased by better than 22,000,000 cu. ft. a day as the result of four wells completed in Winterfield-Clare by Taggart Brothers Co.

(Continued on Page 86)

It's a Fact — Johnston



ALTHOUGH THE OIL INDUSTRY TODAY IS ONE OF THE MOST SCIENTIFICALLY MANAGED OF ALL INDUSTRIES, PURE CHANCE—NOT SCIENCE—HAS PLAYED A BIG PART IN MANY OF ITS IMPORTANT DEVELOPMENTS. FOR EXAMPLE, THE WORLD'S LARGEST OIL FIELD—EAST TEXAS—WAS DISCOVERED BY A "WILDCAT" OPERATOR WHO SIMPLY DREW A LINE ON A MAP FROM THE CORSICANA FIELD IN TEXAS TO THE CADDO POOL IN LOUISIANA. THERE WAS NO SURFACE INDICATIONS...NO SUPPORTING DATA. BUT THE OPERATOR HAD A "HUNCH" THERE WAS OIL UNDER THAT LINE, DRILLED A WELL, AND THERE IT WAS—THE BIGGEST FIELD IN THE WHOLE WORLD!

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CANADIAN FIELDS

Vermilion Field Extended Three Miles; Tests Planned

By VICTOR LAURISTON

CHATHAM, Ont., Dec. 1.—An important extension to the Vermilion field was indicated by completion of Acme Oil & Gas No. 2 around 1,800 ft. with flush estimated 100 bbl. daily. This extends the proven field nearly 3 miles south, opening a new area for development. Acme company is locating a series of tests.

Old Taber Field to Be Revived

In southern Alberta, Majestic Mines some time ago reconditioned the old Plains Petroleum No. 2 producer in the Taber field, and put it on the pump. The well is pumped intermittently to meet market demand, averaging 20-25 bbl. daily, crude being shipped to the North Star refinery at Winnipeg. In the same general area, Noble Drilling Co. of Vancouver has secured reinstatement of its leases and is preparing for active drilling, probably on its previous location, LSD 14, 33-8-17w4.

British Columbia Gas Project Planned

A Vancouver and Calgary group is planning to develop gas production in the Fraser Valley area of British Columbia, about 20 miles from Vancouver and New Westminster. This area has been the scene of a number of deep tests for oil, notably Empire No. 2, drilled in 1918, which reached 5,743 ft. The deep drilling disclosed numerous shallow gas shows which it is now planned to test on a systematic and economical basis. Depths range from 200 ft. to below 1,120 ft. It is planned to pipe the gas to Vancouver and New Westminster, to supplement or replace oil fuel, which has been extensively used.

Alberta Crude Runs Average 27,991 Bbl.

Crude and natural-gasoline production from all Alberta fields for the week ending November 17 averaged 27,991 bbl. daily, compared with 26,947 bbl. daily for the previous week, and 29,603 bbl. daily for the corresponding week last year. The daily output included 26,871 bbl. of crude and 814 bbl. of natural gasoline from Turner Valley and 306 bbl. of crude from outside fields. There were 169 crude producers in Turner Valley and 23 in outside fields. The weekly summary showed 35 wells drilling, 1 finished, 1 new producer, 7 testing, 1 resuming, 5 spudded, and 3 drilling licenses issued.

Total Canadian Output Is Up

Canada's crude output for September totaled 878,782 bbl. against 870,881 bbl. in August, with comparative figures as follows:

	Bbl. Sept.	Bbl. Aug.
New Brunswick	1,772	1,893
Ontario	13,378	12,901
Alberta	859,218	853,563
Northwest Territory	4,414	2,524

For the 9 months ending September 30, New Brunswick production increased from 14,113 bbl. in 1940 to 17,131 bbl. in 1941; Ontario declined from 143,088 bbl. to 120,135 bbl.; Alberta increased from 6,094,223 bbl. to 7,344,652 bbl., and Northwest Territories was down from 17,141 bbl. to 14,119 bbl.

Natural-gas production in September was 2,446,539,000 cu. ft. against 1,988,729,000 cu. ft. in August, and 1,782,514,000 cu. ft. in September 1940. For the 9-month period the output was 25,102,463,000 cu. ft. in 1940 and 27,728,401,000 cu. ft. in 1941.

TURNER VALLEY LIME TESTS

North Turner Valley: Major Oils 3, LSD 1, 8-21-3w5, total depth 8,120 ft., Madison at 7,655 ft., with temporary allowable of 748 bbl., made 1,834 bbl. on 24-hour test, running wide open and 1,482 bbl. on initial test with 1/64-in. choke. It is expected to exceed Major No. 2 when tests are completed. Major No. 3 is the most northerly producer in the field.

Royalite Oil 58, LSD 7, 22-20-3w5, total depth 7,787 ft., Madison at 7,220 ft., made a 24-hour flush run of 2,235 bbl. after acidizing with 6,000 gal., and is testing for allowable.

SOUTHWEST TEXAS

Yegua Provides New Pay at Government Wells Field

By F. L. SINGLETON

CORPUS CHRISTI, Tex., Dec. 1.—Interest in the Southwest Texas district was centered on the Laredo district where now sands and extensions were being opened in proven fields. Probably the most outstanding was the opening of Yegua sand production on the west side of the Government Wells field, Duval County. The strike was made by Sun Oil Co. 75 Wiederkehr, located about 1 mile west of the field in the J. Poitevent Survey 55, and drilled to 2,940 ft., total depth. Casing was being cemented for a production test following a 15-minute drill-stem test at 2,934-40 ft., which recovered 700 ft. of pipe-line oil.

This is the first Yegua sand production to be found along this trend, and its discovery is expected to result in a revival of activity for the field which has been practically dormant for the past 2 years. Whether this new sand will extend along the entire west side of the field will have to be determined by future development.

In the same county, and located 7 miles northeast of Bruni, Henderson Coquat 1 R. Lopez, J. Poitevent Survey 455, is waiting on orders after coring sand with an oil odor at 1,693-1,704 ft.

Three Wildcats Staked

Locations for three wildcats were announced during the week. Ten miles northeast of Bruni, Frank Gravis staked location for 1 J. M. Bennett in Survey 433, while southwest of Freer, Magnolia Petroleum Co. is preparing to drill a 2,100-ft. test on the Duval County Ranch Co. lease in the B.S.&F. Survey. North of the Kohler field, drilling was started on P. L. Keller 1 W. R. Peters in Survey 162.

Sejita Defined

Gas-distillate production in the Sejita field, Duval County, was believed to have been defined as Trinity Gas Corp 1 Fofea de Barrera was bottomed at 6,085 ft. with no shows reported. The well topped the Jackson at 5,149 ft., Hockley at 5,324 ft., and is reported to be 308 ft. lower than the company's 1 Yzaguirre, located 4,550 ft. to the southwest.

Yturria Extended

The Ytturia field, Starr County, was extended about 1,100 ft. north with the completion of Sun 1-A Chapotal. Completion was made by perforating casing at 4,257-50 ft., and the well flowed 142 bbl. per day through a 9/64-in. choke. The sand was topped slightly lower than the nearest producer.

Sun Outpost Testing

In the same county, and located about 1½ miles north of the Sun field, Sun 1-C Montalvo is bottomed at 5,334 ft., and the hole is being reamed. Drill-stem testing at 4,982-96 ft., recovered mud with a small amount of oil, while testing at 5,182-86 ft., and 5,330-34 ft., recovered salt water with a slight show of oil.

South Campana Gets New Pay and Extension

Argo Oil Corp. 3-I Edrington, located in the south extension area of the South Campana field, McMullen County, opened production from the Government Wells sand as it was flowing oil and wash water while testing through a ⅞-in. choke. Tubing pressure was 550 lb., and casing pressure 990 lb. Seven-inch casing was cemented on top of the sand at 2,564 ft., after the well flowed 31.4-gravity oil on a 15-minute drill-stem test at 2,562-68 ft., the total depth.

A slight extension was recorded as Transwestern 1 McDowell flowed 67 bbl. in 18 hours through a 5/32-in. choke, after reperforating in the Pettus sand at 3,070-74 ft.

New Frio-Vicksburg Field Showing

The Jim Wells County sector of the Frio-Vicksburg trend had promise of a new field as Ran Morgan prepared to test 1-H fee, located about 3 miles southeast of Orange Grove in the Casa Blanca grant. Total depth of the well is 5,800 ft., and 5½-in. casing was cemented at 5,202 ft., after an electrical survey showed sand at 3,580-3,780 ft., and from 5,104-10 ft.

Nueces County Active

Stanolind Oil & Gas Co. was preparing to complete 1 Gillette, 934 ft. west of the discovery well of the Petronilla field, Nueces County. Total depth of the hole is 7,340 ft., with oil sand logged in the discovery pay at 7,295-96 ft., and at 7,316-32 ft. Salt-water sand was logged at 7,335-40 ft.

In addition to the discovery pay, the shallow pay recently opened by Coquat et al, was logged at 6,963-75 ft., and a drill-stem test of the section recovered 2,500 ft. oil and 100 ft. of salt water. Eight miles southeast of the town of Driscoll, location for a 6,500-ft. wildcat was announced by George Greer for 1 Theis, located in the J. M. Swisher Survey, Section 510.

Wilcox Test Started at Caesar

A 7,500-ft. Wilcox test is being started in the Caesar field, Bee County by the Slick-Urschel Oil Co. The well is located on the Grissom lease in the P. B. McEarly Survey. Protection is held in the area by Transwestern Oil Co., Atlantic Refining Co., Continental Oil Co., Strake Petroleum Co., and the Luling Oil & Gas Co. It is the second Wilcox test to be started in the county within the past few weeks being several miles from the West Tuleta field where Dirks Brothers et al 1 Roy Harris is drilling below 7,200 ft.

Gas Struck in Dimmit County

In Dimmit County, and located 10 miles northwest of the Carrizo Springs field, Wellington Oil Co. was preparing to complete 1-B Sullivan as a gas well. With the hole bottomed at 2,983 ft., 5½-in. casing was cemented at 1,084 ft., preparatory to completing in sand at 1,087-90 ft., where a 25-minute drill-stem test showed 175-lb. working pressure.

SOUTHWEST TEXAS COMPLETIONS

LOWER GULF COAST DISTRICT

Wildcats

Nueces County: Premont 1 Noakes, dry, T.D. 6,514 ft.
Guy I. Warren 1 S. C. Cooper, dry, T.D. 7,016 ft.
Victoria County: Ray Ranger 2 Willett Wilson, dry, T.D. 5,547 ft.

Fields

Agua Dulce, Nueces County: Lockhart Oil Co. 2 Von Blucher, 40,000,000 cu. ft. gas, perf. casing 7,120-40 ft., T.D. 7,173 ft.
Texon Royalty 1 Dryden & Mosely, 135,000,000 cu. ft. gas, 167 bbl. distillate, open flow, T.D. 7,087 ft.
Texon Royalty 5 Horne, 218 bbl., ⅛-in. choke, perf. casing 7,024-47 ft., T.D. 7,049 ft.
Coleto Creek, Victoria County: Albert Plummer 3-C Terrell, 130 bbl., ⅛-in. choke, perf. casing 4,671-75 ft., T.D. 4,731 ft.
East Flour Bluff, Nueces County: Humble 1-N State, 153 bbl., ⅛-in. choke, T.D. 6,786 ft.
Minnie Bock, Nueces County: Clark & Fox 2 Robertson, 56 bbl., 7/64-in. choke, perf. casing 3,787-91 ft., T.D. 3,818 ft.
North McFaddin, Victoria County: Gulf 2-C Taylor, 3,190,000 cu. ft. gas, ¼-in. choke, perf. casing 5,140-50 ft., T.D. 6,000 ft.
Odem, San Patricio County: Seaboard 2 Lane, 103 bbl., ⅛-in. choke, perf. casing 5,414-20 ft.
Refugio County: Hewitt & Dougherty 2 Clarkson, 121 bbl., 9/64-in. choke, perf. casing 5,592-5,600 ft., T.D. 6,320 ft.
Saxet, Nueces County: Southern Minerals 1-A Lawrence, 103 bbl., ⅞-in. choke, perf. casing 4,716-24 ft., T.D. 10,507 ft.
Stratton, Kleberg County: Humble 3 King ranch, 141 bbl., ⅛-in. choke, T.D. 6,675 ft.
S. E. W. Oil Co. 1 San Antonio Joint Stock Land Bank, dry, T.D. 8,005 ft.
Tom O'Connor, Refugio County: Quintana 49-B Heard, 629 bbl., ¼-in. choke, perf. casing 5,818-30 ft., T.D. 5,925 ft.
Woodsboro, Refugio County: Southern Minerals 2 Wood, dry, T.D. 6,000 ft.

LAREDO DISTRICT

Wildcat

Brooks County: W. W. Allen 1 Hocker, T.D. 2,617 ft.

Fields

Alta Mesa, Brooks County: Standard Oil Co. of Texas 19 Mestena Oil & Gas Co., 22 bbl. oil and 5 bbl. salt water, pumping, perf. casing 3,006-16 ft., T.D. 3,024 ft.
Colorado, Jim Hogg County: C. Andrade 4-I Trevino, 45 bbl., ⅞-in. choke, perf. casing 2,821-25½ ft., T.D. 3,432 ft.
C. Andrade 5-H Trevino, 194 bbl., ⅞-in. choke, sand 2,844-54 ft.
Escobas, Zapata County: Dulup Oil Co. 10-C Gracia, dry, T.D. 1,161 ft.
Kelsey, Starr County: Humble 85 McGill, dry, T.D. 5,250 ft.
Killam, Webb County: Anderson & Killam 1 Laurel, 60 bbl. pumping, sand 1,999-2,011 ft.
Lundell, Duval County: Humble 16-B White, 26 bbl. fluid, 65 per cent wash water, pumping.
Rincon, Starr County: Continental 110-A Slick, 61 bbl., 9 hr., ⅞-in. choke, perf. casing 4,006-44 ft., T.D. 4,305 ft.
Continental 112-A Slick, 57 bbl., 12 hr., ⅞-in. choke, perf. casing 4,143-56 ft., T.D. 4,195 ft.
Continental 45-B Slick, 190 bbl., ⅞-in. choke, perf. casing 3,724-36 ft., T.D. 4,243 ft.
Continental 107-A Slick, 186 bbl., ⅞-in. choke, perf. casing 4,068-76 ft., T.D. 4,165 ft.

SOUTH CENTRAL TEXAS DISTRICT

Fields

Darst Creek, Guadalupe County: E. A. Tapp 4 Posey, 25 bbl. oil and 1,650 bbl. sulfur water, pumping, T.D. 2,630 ft.
Tenney Creek, Caldwell County: Ellmag Oil Corp. 3 Perry, 65 bbl., ¼-in. choke, T.D. 2,438 ft.

Appalachian Fields

(Continued from Page 83)

WEST VIRGINIA COMPLETIONS

Boone County

Crook district: Hope Natural 8580 White & Hopkins, 1,565,000 cu. ft. gas, Big lime 2,315-2,550 ft., Injun 2,550-94 ft., Berea 3,048-82 ft., T.D. 3,099 ft.
Owens, Libby-Owens Gas Dept. 47 Allen & Pryor, 244,000 cu. ft. gas after shot, Big lime 1,875-2,089 ft., Big Injune 2,089-2,127 ft., Berea 2,586-2,604 ft., R.P. Big lime 164 lb., Berea 332 lb., T.D. 2,636 ft.

Braxton County

Birch district: Pittsburgh & West Virginia 7604 E. Salisbury and R. M. Bennett, drilled deeper; start 1,817 ft. Salt sand, 165,000 cu. ft. gas, Injun 2,290-2,392 ft., shot 2,383-92 ft., T.D. 2,762 ft.

Calhoun County

Sherman district: Virginian Gasoline & Oil 5 Arminda Elliott, 20 bbl., Injun sand, T.D. 2,092 ft.

Clay County

Buffalo district: Pittsburgh & West Virginia 7809 F. L. Hall, 200,000 cu. ft. gas, Injun sand, T.D. 2,310 ft.

Gilmer County

Bienville district: Pittsburgh & West Virgina 7831 Wm. E. Frashure, 130,000 cu. ft. gas, Big Injun 1,743-1,845 ft., gas 1,783-1,822 ft., T.D. 1,856 ft.

Lincoln County

Carroll district: United Fuel Gas 4930 James D. Miller, 189,000 cu. ft. gas, Berea 1,931-49 ft., Brown shale 2,215-2,350 ft., 2,390-2,460 ft., 2,565-2,630 ft., 2,900-3,186 ft., T.D. 3,191 ft.; R.P. 120 lb. in 48 hr.
Jefferson district: Pridemore & Adkins 2 R. C. Ferrell, drilled deeper, start 2,585 ft., Brown shale 3,975-4,105 ft., shot, final gage 158,000 cu. ft. gas.

Pleasants County

Jefferson district: W. R. Hays 1 Hammett heirs, 2 bbl., Cow Run sand, T.D. 1,934 ft.

Putnam County

Curry district: Dennis M. Roy 4 G. L. Paul, 169,000 cu. ft. gas, Berea; Big lime 1,645-1,814 ft., Big Injun 1,845-85 ft., Berea 2,345-2,370 ft., T.D. 2,390 ft.

Upshur County

Buckhannan district: Pittsburgh & West Virginia Gas Co. 7834 Charles Betts, small gas well; Benson sand 4,611-26 ft., gas 4,515-4,622 ft., T.D. 4,832 ft.

Wirt County

Clay district: Lemon & Collins 2 O. C. Beckner, 2 bbl., Big Injun sand, T.D. 365 ft.

Wood County

Williams district: H. H. Uhl 4 T. L. Shafer, 1½ bbl. Cow Run sand, T.D. 631 ft.

ORISKANY GAS FIELDS

Jackson County

Ravenswood district: Hope Natural wildcat on the Roas L. Boggess farm, about 2½ mi. E of Sandyville, 6,156,000 cu. ft. gas from the Oriskany sand. Big lime 1,872-1,972 ft., Big Injun 1,976-2,020 ft., Berea 2,422-30 ft., Corniferous lime 4,977-5,105 ft., Oriskany 5,105-15 ft., gas 5,105-15 ft., T.D. 5,115 ft., R.P. 1,300 lb. in 1 hr.
Washington district: Hope Natural wildcat on the O. C. Parsons farm about ¾ mi. NE of Hereford, Salt sand 1,680-1,858 ft., Little lime 1,585-81 ft., Big lime 1,881-1,955 ft., Big Injun 1,955-68 ft., Corniferous lime 5,030-5,154 ft., Oriskany 5,154-83 ft.; show of gas and about ¼ bbl. water in the top of the sand; T.D. 5,183 ft.; it will be shot.
Ripley district: United Fuel Gas Co. 5042 J. H. Smith, 5,512,000 cu. ft gas, Corniferous lime 5,015 ft., Oriskany 5,121 ft., shot 5,120-51 ft., T.D. 5,171 ft.
Mullins Gas Co. 1 D. J. Rogers, 5,995,000 cu. ft. gas before shot, Corniferous lime 4,856 ft., Oriskany 4,937 ft., T.D. 4,959 ft.

Kanawha County

Poca district: Columbian Carbon Co. 2 Samuel Taylor, 1,297,000 cu. ft gas, Corniferous lime 4,916 ft., Oriskany 5,073 ft., shot 5,060-83 ft., T.D. 5,127 ft.

MISSISSIPPI AND SOUTHEAST

Second Attempt to Open New Salt Dome Started

By R. MARNE SANFORD

JACKSON, Miss., Dec. 1.—The recently discovered salt dome in Warren County, where Magnolia Petroleum Co. indicated the discovery of a new shallow Wilcox oil field, will be retested with another wildcat by the same company. In Lawrence County in southern Mississippi, the Tide Water Associated Oil will drill another deep wildcat test in the area where 2 weeks ago it abandoned the first test at 10,808 ft. failure.

The Magnolia 1 J. H. Hall, NE NW NE 39-17n-4e (irregular), Warren County, has been quit at a total depth of 4,176 ft. in salt. The test topped the Cane River at 1,768 ft., Tallahatchie at 1,973 ft., Wilcox at 2,195 ft., and found oil shows from that zone. The 9⅝-in. casing was cemented at 2,195 ft.. The well flowed 10 to 15 bbl. of oil in 4½ hours several weeks ago but the flow turned to fresh water. It was shut in, then opened and bailed, however the oil was exhausted. In drilling deeper the cap rock was found at 3,591 ft., anhydrite at 3,760 ft. and the top of the salt, identified to be a new salt dome for the area, was found at 3,845 ft. This zone was penetrated to 4,176 ft., total depth, with no break.

The company, in an attempt to establish oil production on the dome, has abandoned the 1 Hall and staked 2 Hall, still in irregular Section 39-17n-4e, and is moving rig to this location.

Lawrence County

Deep Test Staked

Probably what will develop into another deep wildcat, Tide Water has staked 2 Denkman Lumber Co., NW NE 29-5n-11e, some 4 miles south of the recently abandoned initial test in Section 5, which was quit at 10,808 ft. The first test found some 3,500 ft. of Wilcox section topped at 3,587 ft. and then topped the Midway at 7,025 ft., Selma 7,760 ft., Eutaw 9,020 ft. and Tuscaloosa at 9,343 ft.

In Adams County, J. K. Hughes, Texas operator, has announced a location for a 6,000-ft. wildcat to be drilled on his large block in the area. The test has not been definitely located but will be in Township 9n, Range 2w.

In Sharkey County, where the new Cary field was opened to production some 3 months ago, Mid-States Oil has made arrangements with Klaus Brothers for drilling a wildcat on its near 6,000-acre block which adjoins to the west the discovery block of British American Oil Co., openers of the field. Most of the acreage in the block lies in the western part of Township 7w, however definite location for the test has not been made.

LEGAL

Department of the Interior, General Land Office, Washington, D. C. Notice is hereby given that the oil and gas deposits in the following lands in the Caddo oil and gas field, Louisiana, are offered to the responsible qualified bidder of the highest bonus per acre, pursuant to the provisions of Section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674) at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the Federal Court Room, Post Office Building, Shreveport, Louisiana, at 10:00 o'clock on December 19, 1941: Parcel No. 1—S½ NE¼, W½ SE¼ Sec. 31, T. 20 N., R. 15 W., lot 1 Sec. 25, lots 1 and 3 Sec. 32, lots 1 and 2 Sec. 36, T. 20 N., R. 16 W., 274.27 acres; Parcel No. 2—all, fractional Sec. 20, T. 20 N., R. 16 W., 37.83 acres; Parcel No. 3—lot 3 Sec. 3, lots 3, 4, 5, Sec. 4, lots 5 and 6 Sec. 9, lots 6, 7, 8, 9, 10 Sec. 10, lot 1 Sec. 12, lots 1 and 2 Sec. 15, lot 1 Sec. 16, T. 20 N., R. 16 W., 307.68 acres; Parcel No. 4—SE¼ Sec. 9, E½ SE¼ Sec. 11, N½ SW¼, NW¼ SE¼ Sec. 12, T. 21 N., R. 16 W., 360.46 acres. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount of each bid and file the showing of qualifications to receive a lease required by Section 7 of General Land Office Circular 1386. The remaining four-fifths, together with the annual rental in advance at the rate of $1 per acre, must be paid, and a $5,000 corporate surety bond must be furnished, prior to the issuance of the lease. The bidders are warned against violation of the provisions of Section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior.

PIPE LINE REPAIR CLAMPS
Efficient—Economical More than 45,000 sold

Fig. 7002 Fig. 7001
MADE WITH 1 OR 2 U-BOLTS
In Stock for Immediate Shipment
BROWN & BROWN, Incorporated
LIMA, OHIO, U.S.A.

MISSISSIPPI COMPLETIONS

Wildcat

Warren County: Magnolia 1 J. H. Hall, NE NW NE 39-17n-4e (irregular), elev. 113 ft., top Cane River 1,768 ft., Tallahatchie 1,973 ft., Wilcox 2,195 ft., cap rock 3,591 ft., anhydrite 3,760 ft., salt 3,845 ft., dry at 4,176 ft.

Fields

Tinsley, Yazoo County: Hassie Hunt 5 Sorrells, NW NE NE 31-10n-2w, Woodruff 4,962-82 ft., T.D. 4,982 ft., pumped 250 bbl.

Key & Beckett 2 Saunders, NW NE NE 2-9n-3w, Woodruff 4,916-41 ft., total depth 4,943 ft., pumped 25 bbl. hourly.

C. H. Lyons 2 Lank Smith, SW NE NE 6-9n-2w, Woodruff 4,960-5,044 ft., T.D., pumped 25 bbl. hourly.

Mid-States Oil 12 Cummings, C S½ 31-10n-2w, Woodruff 4,975 ft., T.D. 5,003 ft., pumped 270 bbl. in 14 hr.

W. R. Ray Drlg. 3 Walker, SE NE NW 2-9n-3w, Woodruff 4,941-54 ft., T.D. 4,957 ft., pumped 219 bbl. in 18 hr.

Rosier & Pendleton 5 W. T. Stevens, SW NE SE 2-9n-3w, Woodruff 4,983 ft., T.D. 4,998 ft., pumped 28 bbl. hourly.

G. L. Reasor 5 Sorrells, SW SW E¼ 31-10n-2w, Woodruff 5,015-35 ft., T.D. 5,035 ft., pumped 25 bbl. hourly.

Union Producing Co. 3 J. R. Williams, SE SW NE 35-10n-3w, Woodruff 4,757-73 ft., T.D. 4,810 ft., pumped 48 bbl. in 4 hr.

Salt Water Increasing At Tinsley Field

The increased withdrawals of oil from the Tinsley field reservoir is increasing the number of wells making salt water. During the past week the total wells passed over the 300 mark, 302 wells to date to be exact, and there were 68 wells in the field making salt water in appreciable amounts, the output varying from only a trace to as much as 90 per cent.

The average amount of water from these 68 wells is about 28 per cent. However, the Gholson, Hodges & Culberson 1 Sorrells is making 90 per cent salt water and only 10 per cent oil. One well on the Union Producing Co.'s Friley "A" lease in making 98.2 per cent basic sediment and water.

On November 16 the Union Producing Co. placed in operation a subsurface salt-water-disposal system for its water-producing wells. The injection well is located in NW SE 12-10n-3w, and from 1,400 to 1,500 bbl. per day is being siphoned into the various Wilcox sands from 2,816-63 ft. Although this is the first attempt at subsurface-water disposal for the field, the abundance of sands in the Wilcox zone is expected to attract this method for other operators as the problem becomes more acute.

No figures are available on the total salt-water volume produced daily in the field, but certain calculations may be made. With a total of some 300 wells in the field making a daily average of 74,000 bbl. of oil, it may be estimated that approximately 244 bbl. is produced per well, on the average. From the fact that there are 68 water-making wells in the field it may be roughly estimated that around 5,000 to 6,000 bbl. of salt water is being produced with the oil daily in the field. This represents a figure which is steadily mounting and will continue to do so as the field ages.

Pipe-Line Concern Will

Build Loading Rack

Meantime, as cumulative production for the field mounted to 17,000,000 bbl., Tinsley remained the nation's only major oil-producing area without a pipeline outlet. Reports were current 2 weeks ago that two pipe-line projects were being considered (The Oil and Gas Journal, November 20, 1941, p. 62), but last week the Mississippi Pipe Line Co., a newly organized concern, indicated it would build a 40-car loading rack for shipment from the field by rail. It was not certain whether the pipe-line proposal had been abandoned.

The loading rack will be in 17-10n-2w, between Anding and Tinsley, on the Y. & M. W. Railroad. It will be a double track, 20 cars on each side, and will load and ship 80 cars daily. Commitments have already been received from a few wells.

Michigan Fields

(Continued from Page 84)

MICHIGAN COMPLETIONS

Allegan County

Hopkins Township: Muskegon Development Co. 1 Knorr, NE NW SW 18-3n-12w, 380 bbl. first 22 hr. after acid, T.D. 1,623 ft., Traverse limestone.

Clifford A. Perry 3 Schafer, SW SE NW Sec. 18, pump and flow 32 bbl. first 2 hr., acidized, T.D. 1,595 ft.

Lee Township: Clapsaddle & Harris 1 Malstrom, NW SW NW 19-1n-15w, wildcat, pump 25 bbl., acidized (some salt water), T.D. 1,170½ ft.

Arenac County

Lincoln Township: Socony-Vacuum Oil Co., Inc., 1 Pavelka, NE SE SE 9-18n-4e, wildcat, dry, T.D. 2,901 ft.

Clare County

Franklin Township: Eugene Hilliard 1 Felthouse, C S½ NE NE 3-20n-3w, temporarily abandoned at 3,200 ft., P.B. from show oil at T.D. 3,500 ft.

Winterfield Township: Sun Oil Co. A-9 State-Winterfield, C S½ SE SW 36-20n-9w, 500 bbl., est., acidized, T.D. 3,769 ft.

Taggart Bros. Co. 87 Congdon et al, C SE Sec. 33, 4,740,000 cu. ft. natural gas, T.D. 1,300 ft.

Taggart Bros. Co. 88 Foster-Maney-State, C SW Sec. 34, 8,460,000 cu. ft. gas, T.D. 1,280 ft.

Taggart Bros. Co. 85 Merritt, C NE Sec. 33, 3,140,000 cu. ft. gas, T.D. 1,315 ft.

Taggart Bros. Co. 86 Egts-Thayer, C SW Sec. 29, 5,810,000 cu. ft. gas, T.D. 1,350 ft.

Isabella County

Broomfield Township: L. & S. Drilling Co. 1 Nicholson, NW SW NE 13-14n-6w, location abandoned.

Deerfield Township: L. & S. Drilling Co. 1 Cox, SE SE SE 18-14n-5w, 750,000 cu. ft. gas, T.D. 1,291 ft.

Kent County

Walker Township: H. C. Williams 1 Murray, SE NW NW 29-7n-12w, pumping 35 bbl., acidized, T.D. 1,938 ft.

Midland County

Greendale Township: Fisher-McCall Oil & Gas Co., Inc., 1 Consumers Power Co., C N½ NW SW 16-14n-2w, pump and flow 50 bbl., acidized, T.D. 3,568 ft.

Osceola County

Lincoln Township: Pure Oil Co. 2 Brock, C S½ SW SW 20-18n-10w, 4,680 bbl., T.D. 3,622 ft.

Gulf Refining Co. B-2 Jewett, C S½ SW NW Sec. 31, 2,400 bbl., T.D. 3,592½ ft.

Welsh Oil Co. 1 Nedel communitized, C S½ SW NW Sec. 21, dry, T.D. 3,648 ft.

Roscommon County

Roscommon Township: Pure Oil Co. No. B-1 State-Roscommon, C S½ SW NW 34-21n-3w, 8,832 bbl., T.D. 3,247 ft., Traverse limestone.

Van Buren County

Bloomingdale Township: N. R. Dodd A-1 Bell, SW NE SW 1-1s-14w, pump 40 bbl., with water, acidized, T.D. 1,282 ft.

W. R. Borough, Inc.-K. A. Fox 2 Bell, SW NW SW Sec. 1, pump 80 bbl., with water, acidized, T.D. 1,276 ft.

Earl G. Hartman 1 Truax, SW NW NE Sec. 11, pump 12 bbl., with water, acidized, T.D. 1,282 ft.

R. D. Malcolm, tr., 1 Dvorak, NW NW NE Sec. 12, pump 10 bbl., with water, acidized, T.D. 1,274 ft.

Clapsaddle & Harris 1 Albright, W½ SE SW Sec. 12, pump 130 bbl., 75 per cent water, acidized, T.D. 1,288½ ft.

Geneva Township: Dudley Cecil Hay 1 Pineau, NW NE SE 10-1s-16w, wildcat, acidized dry after show of oil, T.D. 1,108 ft.

Rocky Mountain Runs

Production estimates for week ended November 29:

WYOMING

	Bbl.
Salt Creek	13,450
Big Muddy	1,140
Byron	2,990
Cole Creek	910
Dallas Derby	400
Elk Basin	390
Frannie	3,080
Garland	1,430
Grass Creek	1,360
Hamilton Dome	950
LaBarge	2,100
Lance Creek	23,100
Lost Soldier	7,400
Mahoney	1,080
Maverick Springs	2,920
Medicine Bow	710
Mule Creek	410
Oregon Basin	8,920
Osage	500
Quealy Dome	370
Rock River	2,610
South Casper Creek	480
Wertz	5,290
Total Wyoming	83,250

MONTANA

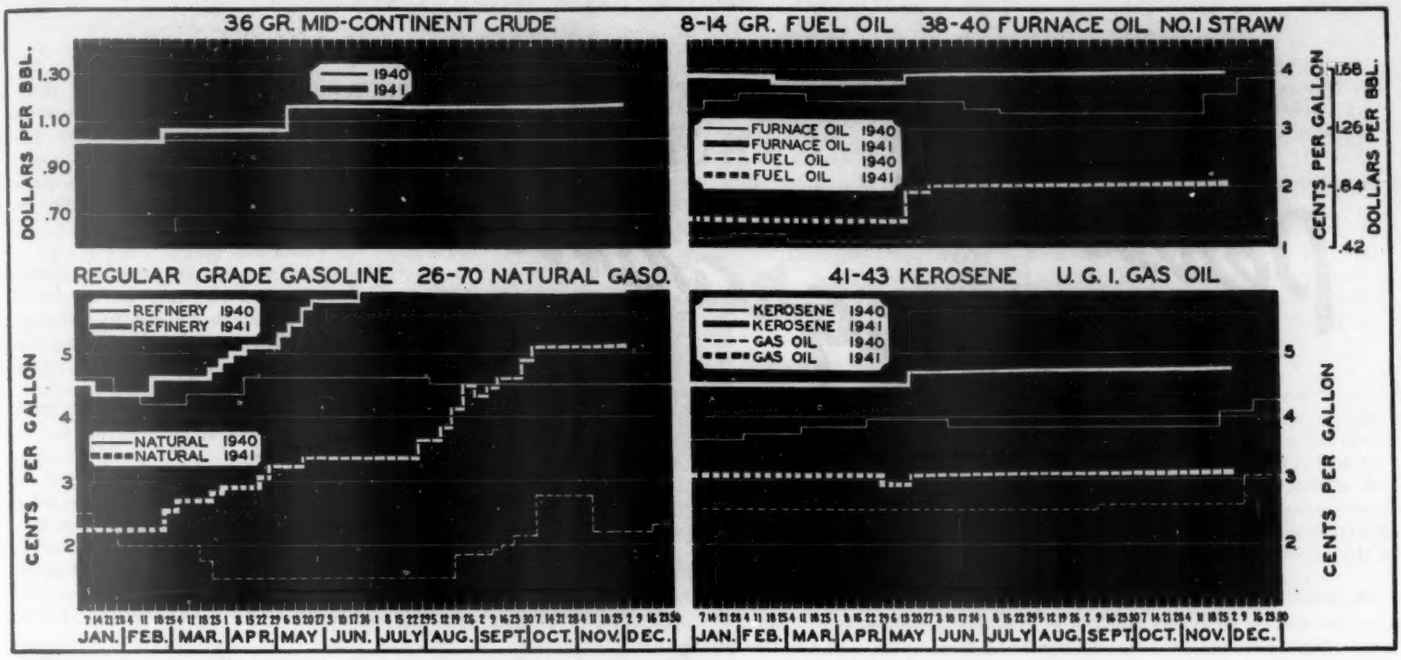
Kevin-Sunburst	5,080
Cat Creek	460
Cut Bank	14,550
Dry Creek	460
Pondera	840
Total Montana	21,440

COLORADO

Iles Dome	1,520
Fort Collins and Wellington	380
Wilson Creek	1,700
Hiawatha	530
Total Colorado	5,360

NEW MEXICO

Arrowhead	4,310
Cooper	3,020
Eaves	880
Eunice	19,170
Hardy	2,070
Hobbs	10,640
Jal	400
Langlie	3,860
Lynch	450
Lynn	1,050
Mattix	3,620
Monument	20,520
Penrose	3,130
Rhoades	490
Skelly	1,640
South Eunice	2,820
South Lovington	1,610
Vacuum	14,100
West Eunice	560
Artesia-Maljamar	21,970
Total New Mexico	117,670



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Two Potential Market Depressants Fail to React on Price Structure

By H. STANLEY NORMAN

DEPRESSING influences injected into the Gulf Coast and eastern markets had made no impression this week on refinery quotations. To the contrary, slight evidences of weakness apparent a week ago were modified or completely eliminated this week in the New York territory.

One development that may react sharply on the Gulf Coast market is the report that purchasing under the lend-lease program will be shifted early next year to the Caribbean. The report is supported by amendment of the neutrality act which will permit American tankers to move directly to England and other countries opposed to Axis powers. Abandonment of the shuttle service in which some American tankers were engaged during effectiveness of the original neutrality law may curtail the large volume of petroleum buying on the Gulf Coast.

Tanker Rates Reduced

Another depressing element is the announcement by the Maritime Commission that a 20 per cent reduction became effective December 1 in coastwise-tanker rates for transportation of gasoline. The new rate is 40 cents per barrel compared with 50 cents previously authorized. The reduction in transportation costs logically may be reflected in softer motor-fuel prices on the East Coast.

Interior refiners are holding their gasoline and fuel-oil quotations firm at previous levels in the face of heavy seasonal consumption and on the strength of frequent invitations to quote on spot or deferred business. Demand in the Chicago district moved back into peak winter brackets this week under the stimulation of moderate weather inducive to automobile operation.

Reports that the lend-lease petroleum-purchasing program will be shifted to South America were not accompanied by specification of a date for the change. There will be no apparent impact on the Gulf Coast market for several weeks, even though actual buying is shifted immediately. Most refiners in coastal Texas and Louisiana have booked orders several weeks ahead of projected-production schedules. Advance orders will carry most of the plants through the next 60 to 90 days of reduced automobile operations in the territory they serve.

The slightly stronger position of the East Coast quotations was attributed to the continued strength of the Gulf market and to a decline in temperatures which resulted in a heavier call for heating oils. Heating oils continue to be quoted at 5.2 cents by virtually all suppliers in the New York area. Reports of price concessions that were current in the previous week were absent and both refinery and retail prices were steadier.

Market features of the week from the Gulf, East Coast, Pacific Coast and inland refining districts are consolidated in this report. Major stock changes in the A.P.I. weekly refinery statistical table appear on Page 13.

Refinery quotations in most sections of the country continued firm this week. Easiness apparent a week ago in the light fuel-oil market on the East Coast disappeared as consumers placed orders more representative of winter demand. Gulf Coast refiners awaited confirmation of reports that lend-lease buying is to be shifted entirely to the Caribbean supply centers in the near future. Coastwise tanker rates on gasoline cargoes were cut 20 per cent on December 1 by order of the Maritime Commission, lowering the charge to 40 cents per barrel.

Pennsylvania Market Softer

The Pennsylvania gasoline market has softened slightly, probably reflecting alleviation of the tight supply situation that prevailed on the East Coast during most of the fall and early winter.

Refiners in all sections of the country are somewhat concerned over the long-range viewpoint. Predictions that gasoline stocks will reach a total of 110,000,000 to 112,000,000 bbl. by March 31 have been expressed. Whether the market will be able to stand even a temporary surplus of this magnitude is questionable.

Natural gasoline continues strong in practically all manufacturing and refining areas. Movement from North Texas points to the Gulf Coast is particularly heavy, but supplies are insufficient to satisfy the demand for coastwise movement to the northern states and for blending in finished materials for lend-lease sales.

The demand for distillate burning oils appeared to be increasing in the Middle West consuming district as well as on the East Coast. While the consumption of light fuel oils remains considerably below peak winter levels in the Middle West, distributors report that most of the stocks accumulated during the summer and held over from the 1940-41 winter have been liquidated.

Residual fuel oil is firm on all refinery markets, particularly on the Pacific Coast, the northeastern section of the country and in the Middle West industrial centers. Railroads, which consume practically all residual fuel produced in the Mid-Continent, are asking for the full contract quotas.

Personal Paragraphs

COMDR. WENTWORTH OSGOOD, representative of the OPM in Los Angeles, Calif., left for Washington last week, presumably to discuss the California conservation plan with his superiors in the nation's capital.

FRANK PHILLIPS, Phillips Petroleum Co., will again be host to all school children of Washington County, Oklahoma, and five schools in Osage County, Oklahoma, when on December 5 and 6 Osa Johnson will present her motion picture, "African Paradise," in the Civic Center at Bartlesville, Okla., for three performances.

HIAL GERNERT has been promoted to district superintendent of the Texas Co., at Hamilton, Colo.

"MIKE" MICHAELS, veteran scout for Shell Oil Co., Inc., has been transferred from Enid to Stillwater, Okla., nearer the center of his district.

NELSON A. ROCKEFELLER, coordinator of inter-American affairs, has been appointed by Vice President Wallace to be a member of the Economic Defense Board.

GUS A. BARNES, J. C. TEAL and E. A. KERMOTT were presented with gold, diamond-studded 20-year pins by the Socony-Vacuum Oil Co. at Kansas City, Mo., at a dinner there last week.

HAROLD A. GREEN, Standard Oil Co. of New York, who has been stationed at Budapest, Hungary, for the past 6 years, returned to the United States last month, the work of the company having been completed. Mr. Green lives in Franklin, Pa.

JOHN R. SUMAN, vice president, Humble Oil & Refining Co., Houston, Tex., and president of the American Institute of Mining and Metallurgical Engineers, was honored at a dinner in Houston the past week given by the Gulf Coast chapter of the A.I.M.E.

D. L. SHEPHERD, Union Oil Co., spoke on "Tax Information Please" at the last monthly meeting of the Los Angeles Petroleum Accountants Society, and H. D. OSBORN, General Petroleum Corp., presented a report on a series of meetings held recently at the annual meeting of the A.P.I. in San Francisco.

GEORGE W. DUFFING, head research analyst of the petroleum and coal industries for Scudder, Stevens & Clark, New York investment counsel, has been appointed price executive in charge of the fuel section of the OPA. He succeeds M. QUINN SHAUGHNESSY, who was drafted from the SEC to organize the OPA staff. The OPA has also appointed L. DONALD MACKAY, Burlington, Vt., to the fuel section. Mr. Mackay has a background of long service with Standard Oil Co. of New York, and more recently with Shell Oil Co., Inc., where he has been vice president, treasurer and division manager.

JAMES ANDERSON, vice president and treasurer of Humble Oil & Refining Co.; GEORGE A. HILL, JR., president of the Houston Oil Co., and JOSEPH H. RUSSELL, assistant to the vice president of the Gulf Oil Corp., all of Houston, were elected as directors of the Houston Chamber of Commerce the past week.

The USO, which recently concluded a successful drive for the nation-wide fund for entertainment of defense forces, has added to the total raised the sum of $4,521.71, which came from the sale of 350 tons of scrap metal donated by J. PAUL GETTY, of Getty Oil Co., who also is a large stockholder in Tide Water Associated Oil Co. This donation was the largest single contribution in the California campaign.

W. G. LACKEY has been transferred to Fort Worth, Tex., as landman for Stanolind Oil & Gas Co., succeeding W. T. SMITH. Mr. Smith was recently moved to Tulsa, to take charge of leasing operations for all divisions of the company. Mr. Lackey went to Fort Worth from Wichita, Kans., where he was district landman for Kansas and Nebraska. Along with the promotion of Mr. Lackey, R. E. NELSON, JR., was transferred to Fort Worth as his assistant. Mr. Nelson was formerly district landman at Amarillo.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Pipe manufacturers are unable to meet the demands of oil interests for pipe required in carrying on field work in various parts of the country.

Paul Arbon, Tulsa, a young producer, is now a lieutenant in the Royal Aviation Corps and has been three times conspicuously mentioned in the orders of the day.

John D. Archbold, president of the Standard Oil Co. of New Jersey, died December 5 at his home in Tarrytown, N. Y. He was 68.

20 YEARS AGO

Henry N. Greis, president of the Atlantic Petroleum Corp., returned to Tulsa late last week and announced that in his belief all stockholders of Atlantic Petroleum should not hesitate in sending in their stock in order that it might be exchanged at once for Cosden stock.

Charles E. Wallen, 47, who had probably worked in more foreign countries than any other American oil man, died at his home in Petrolia, Ont., recently. Until the war forced him to return to Canada, he was field manager in Russia for the North Caucasian Oilfields, Ltd.

Stockholders of the Diamond Gasoline Co., Osage Gasoline Co., Ajax Gasoline Co. and Atlas Petroleum Co. met in Nowata, Okla., Saturday and formed the Diamond Refining Co., a 5-million-dollar corporation.

10 YEARS AGO

Gov. Ross S. Sterling has revoked a military order issued earlier the same day reducing East Texas oil production from 125 bbl. per well per day to 110 bbl. per well per day. It was assumed the governor had decided to hold up the order pending a conference with Chairman Thurman Hill of Kansas and a representative of the Oklahoma Commission.

The 1 Sims well of the Leslie Petroleum Co. (the Robert Dollar organization) in the Hoh River Valley, near Seattle, Wash., came into production at 805 ft. with an initial flow of 20 bbl. daily of high-grade paraffin oil.

WILLIAM T. UZZELL, JR., has again been transferred by Ohio Oil Co., to McFadden, Wyo.

GAGE LUND, president, California Co., New Orleans, La., left last week for a business trip to the West Coast.

DAVID M. EVANS has received promotion to district geological engineer for Honolulu Oil Corp. He remains at Brownfield, Tex.

C. O. REISER, formerly petroleum engineer for Standard Oil Co. of New Jersey, has accepted a position as instructor in chemistry at University of Wisconsin, at Madison.

J. C. POTTS, who was 65 years old last month, and who started with Phillips Petroleum Co. July 1, 1929, retired from service with the company at Tulsa this week.

WILLIAM E. WALLIS, who recently returned from Egypt, where for the past 3 years he has been doing geological work for Standard Oil Co., is on vacation at his home in Long Beach, Calif.

C. A. YEATMAN, who for some time has been production-department engineer of Shell Oil Co., Inc., in Los Angeles, Calif., has been appointed assistant general-operations manager and in his new position will maintain offices in San Francisco, Calif.

GLEN M. RUBY, consulting geologist of Los Angeles, Calif., will leave Miami, Fla., December 12, by clipper for points in Brazil and Argentina. Starting the first of the year he will make a geological survey of oil possibilities in Chile for the government of that country. He expects to be gone from the United States about 6 months.

T. D. TABBERT, engineer, Shell Oil Co., Inc., has been transferred from Perry, Okla., to Pampa, Tex.

F. R. BALL is now the purchasing agent of Oklahoma Pipe Line Co. at the company headquarters in Tulsa. He was formerly senior draftsman in the engineering department.

ALEXANDER FRASER, president, Shell Oil Co., Inc., arrived in Houston, Tex., Monday for a visit of several days. He is accompanied by Mrs. Fraser.

BENEDICT I. LUBELL, executive vice president and general manager of Bell Oil Co., Tulsa, was guest of honor at a surprise birthday party in his office last Wednesday. He was presented with a set of monogramed book ends by members of the office force.

FRANK W. LOVEJOY, Socony-Vacuum Oil Co., Inc., was guest speaker at the monthly luncheon meeting of the American Marketing Association, at Hotel Commodore, New York City, on November 26. His topic was "Are Present Marketing Practices Too Scientific to Be Effective?"

O. V. HENRY for several years production superintendent of the Haynesville and Cotton Valley fields, in Louisiana, for the Ohio Oil Co., has been transferred to Mount Pleasant, Mich. E. B. CHARLTON, who has been superintendent of the pipeline and gasoline departments for the Ohio company, has been made superintendent of both departments. Mr. Henry and his family left for their new home in Michigan last week.

Los Angeles Basin chapter of the American Petroleum Institute held an election last week and after the votes had been counted it was found that the new officers for 1942 consisted of E. E. LARSON, Texas Co., with offices at Long Beach, Calif., chairman, and M. G. EDWARDS, Shell Oil Co., Inc., also of Long Beach, vice chairman. TOM MURPHY, of Martin-Decker, was elected secretary-treasurer, and EARLE M. BOGGESS, Baker Oil Tools, was elected assistant secretary-treasurer.

Awarded Fritz Medal

Everette Lee De Golyer, consulting petroleum engineer of Dallas, Tex., and deputy for conservation under the federal Petroleum Coordinator for National Defense, has been awarded the John Fritz Medal for 1942. Sponsored by the four Founder Engineering Societies, the medal is generally recognized as the greatest distinction in the gift of the engineering profession. The award to Mr. De Golyer is made in recognition of his pioneer work in the application of geophysical exploration to the search for oil fields. It is estimated that the discovery of 3 billion barrels of oil, in the United States alone, can be attributed to this technique.

EVERETTE LEE DE GOLYER

Former recipients of the John Fritz Medal include George Westinghouse, Thomas A. Edison, George W. Goethals, Orville Wright, Guglielmo Marconi, Herbert Hoover, and Daniel C. Jackling.

Mr. De Golyer, a native of Kansas, graduated from University of Oklahoma in 1911. After serving for a few years on the U. S. Geological Survey, he entered the petroleum industry and has been engaged in it ever since. He is said to be the first engineer to recognize the importance of geophysical methods of prospecting for oil, and he has been prominent in developing and applying new methods since 1914. Through these methods vast areas have been explored that were not susceptible to successful exploration by the study of surface geology. He organized and was for many years chairman of the board of the Amerada corporation. He is now a member of the firm of De Golyer, McNaughton & McGhee, consulting petroleum engineers of Dallas. In 1940 he was awarded the Anthony F. Lucas Gold Medal by the American Institute of Mining and Metallurgical Engineers in recognition of the same outstanding achievements in the petroleum industry for which he will receive the John Fritz Medal. Presentation will be made at a dinner to be held at the Waldorf-Astoria Hotel in New York City, January 14, 1942.

A. T. REMINGTON, scout for Pure Oil Co., has been transferred from Abilene, Tex., to Jackson, Miss.

DR. S. H. KNIGHT, professor of geology at the University of Wyoming, discussed the evolution of the Rocky Mountains before the Fort Worth (Tex.) Geological Society and the Technical Club at the society's weekly luncheon held at the Worth Hotel last week.

W. O. LINDSEY has been named Wichita Falls, Tex., agent for the Texas Co. He was transferred from the company's division offices at Dallas, Tex., and prior to that he was connected with the company in Washington, D. C., for a number of years.

BENJAMIN E. COOK, a former member of the legal staff of the old Marland Oil Co., at Ponca City, Okla., and a resident of Ponca City for 15 years, has been named to the appellate section of the National Labor Relations Board and is moving from Washington, D. C., to Cincinnati, Ohio.

C. C. CLINE has been elected county chairman of the Cattaraugus County (N. Y.) Petroleum Industries Committee. Election took place at a meeting in Olean, N. Y., recently. E. D. CRAY, secretary of the State Petroleum Industries Committee, New York City, was one of the principal speakers.

ARMON H. BOST, an accountant for Gulf Oil Corp., Tulsa, and now a captain at Camp Barkeley, near Abilene, Tex., has been made adjutant of the active post. He was called into the service as a first lieutenant in May, and after brief service at Fort Sill and then at Fort Sam Houston was made a captain.

SAM D. ROGERS, of Petty Geophysical Engineering Co., San Antonio, Tex., addressed members of the Fort Worth Geological Society recently. He showed pictures he took while foreign supervisor for Petty during the past 4 years. The pictures were taken in Trinidad, Venezuela, England, France, Germany, Egypt and Dutch East Indies.

C. C. INGRAM, area superintendent, was principal speaker at a program given by Shell Pipe Line Corp. at Cushing, Okla., last week, when seven employes were presented with service emblems. Receiving awards and years of service were M. A. HARPER, 15; JAMES STEVENSON, 15; H. C. STOKES, 20; J. W. JEWETT, 15; LEWIS POLSTON, 15; and SAM MORPHEW, 10. TOM DEEHAN served as chairman of the program.

E. W. MILES, Standard Oil Co. (Indiana) has been appointed chairman of the asphalt subcommittee for District 2, succeeding A. A. STAMBAUGH, who asked to be relieved from the assignment because of other duties previously assigned to him by the marketing committee. A. M. MAXWELL, vice president, Standard Oil Co. of Ohio, replaces Mr. Stambaugh as a member of the committee.

EDWIN N. CARLSON, Wichita, Kans., was named vice president for Kansas of the Independent Petroleum Association of America at a special meeting of the Kansas directorate recently. He succeeds E. C. MORIARITY, of Wichita, who has been named to the executive committee of the national organization. Mr. Carlson's first decision on assuming the Kansas vice presidency was to name H. M. GILLESPIE, of Birkett & Gillespie, as chairman of arrangements for the annual state meeting of the I.P.A.A. to be held December 5 in Wichita.

Shifts: M. A. SPARKS, engineer, Sun Oil Co., from San Miguel, Calif., to Seminole, Okla.; HOWARD R. GHOLSON, president, Craig-Gholson Co., from Lubbock, Tex., to Evansville, Ind.; A. W. REA, drilling superintendent, J. V. Dunbar, from Sims to Flora, Ill.; A. A. SPEARIN, superintendent, Aetna Oil Co., Inc., from Owensboro, Ky., to Evansville, Ind.; H. S. CHRISTIAN, president, Mid-South Refining Co., from Jackson, Miss., to Tyler, Tex.; LLOYD S. PARKER, geologist, Texas Pacific Coal & Oil Co., from Jackson, Miss., to Shreveport, La.; J. E. LE SUER, president, Le Suer Oil Corp., from Wellsville, N. Y., to San Jose, Calif.; R. N. BILLS, engineer, Amerada Petroleum Corp., from Plaquemines, La., to Lake Charles, La.

RETAIL OIL MARKETS...

Tank-wagon and filling-station prices on gasoline and kerosene furnished by larger marketing firms

Prices as of December 2, 1941

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dir.	Gasoline Inc. tax	Kero. tank wag.
Chicago, Ill.	16.1	14.1	4.5	10.3
Decatur	15.4	13.4	4.5	9.5
Joliet	16.4	14.1	4.5	10.3
Peoria	16.2	13.7	4.5	10.1
Quincy	13.4	12.4	4.5	10.0
Davenport, Ia.	16.2	14.7	4.5	10.1
Des Moines	15.9	11.9	4.5	9.8
Mason City	16.2	14.7	4.5	10.1
Duluth, Minn.	17.7	16.2	5.5	10.6
Mankato	17.4	15.9	5.5	10.3
Minneapolis	17.4	15.9	5.5	10.3
La Crosse, Wis.	17.4	15.9	5.5	10.3
Green Bay	17.7	16.2	5.5	10.6
Milwaukee	17.6	16.1	5.5	10.5
Detroit, Mich.	15.9	14.4	4.5	9.6
Grand Rapids	15.9	13.8	4.5	9.6
Saginaw	15.9	14.4	4.5	9.6
Evansville, Ind.	16.9	15.4	5.5	9.6
Indianapolis	17.1	15.2	5.5	9.8
South Bend	17.5	16.0	5.5	10.2
Fargo, N. D.	18.4	16.9	5.5	11.3
Huron, S. D.	17.8	16.3	5.5	10.7
Kansas City, Mo.*	14.9	13.4	4.5	9.4
St. Louis*	13.4	11.9	4.5	9.8
St. Joseph	15.7	14.2	4.5	9.6
Wichita, Kans.	14.8	12.7	4.5	8.0

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers. On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off, minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective Sept. 18, 1941, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 9.0 cents; 100-149 gal., 8.0 cents; 150 gal. and over, 7.5 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal. 7.5 cents; 150-399 gal., 7.5 cents; 400 gal. and over, 7.0 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7.5 cents; 400 gal. and over 7.0 cents. Stanolex fuel oil A, 1-99 gal., 8.0 cents; 100-399 gal., 7.0 cents; 400-749 gal., 6.0 cents, 750 gal. and over, 5.25 cents. Stanolex fuel oil B, 1-99 gal., 8.0 cents; 100-399 gal., 7.0 cents; 400-749 gal., 6.0 cents; 750 gal. and over 5.25 cents. Stanolex Bunker C fuel oil, 1-399 gal., 6.5 cents; 400-999 gal., 5.5 cents; 1,000 gal and over, 4.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Cons'r tank wag.	Gasoline Di-vided dir.	Gasoline Inc. tax	Kero tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Cons'r tank wag.	Gasoline Net dir.	Gasoline Inc. tax	Kero. tank wag.
Atlanta, Ga.	18.50	18.50	7.5	10.0
Augusta	18.50	18.50	7.5	9.5
Macon	18.50	18.50	7.5	10.0
Savannah	17.50	17.50	7.5	9.0
Birmingham, Ala	19.00	19.00	8.5	9.0
Mobile	19.00	19.00	9.5	8.5
Montgomery	20.00	20.00	9.5	10.0
Jackson, Miss	18.00	18.00	7.5	9.0
Vicksburg	17.50	17.50	7.5	8.5
Jacksonville, Fla.	18.50	18.50	8.5	8.0
Miami	18.50	18.50	9.5	8.0
Pensacola	19.00	19.00	9.5	8.0
Tampa	18.50	18.50	8.5	8.0
Lexington, Ky.	17.50	17.50	6.5	9.0
Covington	16.50	16.50	6.5	9.0
Louisville	17.00	17.00	6.5	8.5
Paducah	15.50	15.50	6.5	8.5

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax, and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Cons'r tank wag.	Gasoline Dir. tank wag.	Gasoline Inc. tax	Kero. tank wag.
Atlantic City	13.5	14.0	4.5	7.9
Newark	13.5	14.0	4.5	7.9
Annapolis	14.85	15.35	5.5	9.7
Baltimore	14.25	14.75	5.5	8.7
Cumberland	15.65	16.15	5.5	10.2
Washington, D. C.	12.50	13.00	3.5	9.2
Danville, Va.	16.95	17.45	6.5	10.45
Norfolk	15.75	16.25	6.5	10.2
Petersburg	16.05	16.55	6.5	11.2
Richmond	16.05	16.55	6.5	11.2
Roanoke	17.25	17.75	6.5	10.7
Charles'n, W. Va.	17.55	18.05	6.5	11.5
Parkersburg	16.85	17.35	6.5	11.5
Wheeling	16.85	17.35	6.5	11.8
Charlotte, N. C.	18.40	18.90	7.5	9.5
Hickory	18.95	19.45	7.5	10.5
Mount Airy	18.80	19.30	7.0	9.7
Raleigh	18.15	18.65	7.0	10.5
Salisbury	18.45	18.95	7.5	10.9
Charleston, S. C.	17.25	17.75	7.5	(*)
Columbia	18.10	18.60	7.5	(*)
Spartanburg	18.80	19.30	7.5	(*)

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at a time by hose connections, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery: 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

*Kerosene business of the company at these points now exclusively handled by dealers.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline Cons'r tank car	Gasoline Dir. tank wag.	Gasoline Inc. tax	Kero. tank wag.
Philadelphia, Pa.	14.0	15.0	5.5	10.15
Pittsburgh	14.5	15.5	5.5	10.5
Allentown	14.5	15.5	5.5	10.5
Erie	14.5	15.5	5.5	10.5
Scranton	14.5	15.5	5.5	10.5
Altoona	14.5	15.5	5.5	10.5
Dover, Del.	...	15.5	5.5	10.5
Wilmington	...	15.0	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank truck* wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
San Francisco	14.5	18.5	4.5	11.5
Los Angeles	14.0	18.0	4.5	10.0
Fresno, Calif.	15.5	19.5	4.5	12.5
Phoenix, Ariz.	18.5	22.5	6.5	12.5
Reno, Nev.	17.5	21.5	5.5	13.5
Portland, Ore.	17.0	21.0	6.5	13.5
Seattle, Wash.	17.0	21.0	6.5	13.5
Spokane	19.0	23.0	6.5	16.5
Tacoma	17.0	21.0	6.5	13.5

*Posted net tank-truck prices (including tax).

Resale and commercial discounts, effective October 1, 1941: Tank-car deliveries 0.25 cent a gallon off posted net tank truck. Commercial: Retail deliveries, and/or tank-truck deliveries of less than 40 gal., 4 cents per gallon above posted net tank-truck price for Standard Aviation, Standard's Supreme, and Standard Gasoline, and 3 cents per gallon above posted net tank truck for Flight Gasoline, except single deliveries of less than 40 gal. to marine trade only, which are billed at posted net tank-truck price.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Gasoline Inc. tax	Kero. tank wag.
Denver, Colo	14.5	5.5	11.0
Grand Junction	18.0	5.5	12.5
Pueblo	14.5	5.5	9.5
Casper, Wyo.	17.0	5.5	12.0
Cheyenne	16.0	5.5	11.5
Billings, Mont.	18.0	6.5	12.5
Butte	17.0	6.5	13.5
Great Falls	17.0	6.5	12.5
Helena	17.0	6.5	13.0
Salt Lake, Utah	18.5	6.5	14.5
Boise, Idaho	†20.1	6.5	16.5
Twin Falls	†21.1	6.5	17.0
Albuquerque, N. M.	*17.5	7.0	10.0
Roswell	*15.5	7.0	8.5
Santa Fe	‡18.0	7.5	10.0

*Includes city tax of 0.5 cent. †Includes toll-bridge tax of 1 mill. ‡Includes city tax of 1 cent.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Gasoline Incl. tax	Kero. tank wag.
Texarkana, Ark.	14.0	5.5	6.0
Fort Smith	15.5	7.0	6.5
Little Rock	17.25	8.0	8.0
Muskogee, Okla.	15.0	7.0	8.0
Oklahoma City	15.0	7.0	8.0
Tulsa	15.0	7.0	8.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Cons'r tank wag.	Gasoline Dir. tank wag.	Gasoline Incl. tax	Kero. tank wag.
New Orleans, La.	17.25	17.75	8.5	‡10.5
Baton Rouge	17.25	17.50	8.5	‡10.5
Alexandria	17.25	17.50	8.5	‡10.5
Lafayette	17.50	18.00	8.5	‡10.0
Lake Charles	17.50	18.00	8.5	‡12.0
Shreveport	17.00	17.0	8.5	‡9.0
Knoxville, Tenn.	20.00	20.50	8.5	12.5
Memphis	17.25	17.75	8.5	10.5
Chattanooga	19.00	19.5	8.5	11.0
Nashville	19.00	19.5	8.5	10.0
Bristol	18.25	18.75	8.5	12.0

Esso at dealer price less 0.5 cent per gallon to undivided dealers.

‡Includes 1-cent state tax.

Price basis to commercial consumers throughout Louisiana, Arkansas, and Tennessee: On single deliveries of 50 gal. or more at a time—posted consumer tank-wagon price. On single deliveries of less than 50 gal. at a time—posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price is the same as the posted dealer tank-wagon price, less 0.5 cent per gallon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Comm. tank wag.	Gasoline Dir.* tank wag.	Gasoline Inc. tax	Kero. tank wag.
Albany	14.2	14.7	5.5	7.7
Met. New York	14.4	14.9	5.5	8.0
Buffalo	14.5	15.0	5.5	8.3
Rochester	15.1	15.6	5.5	8.8
Syracuse	14.8	15.3	5.5	8.7
Portland, Me.	14.6	15.1	5.5	8.1
Manchester, N. H.	15.6	16.1	5.5	9.0
Burlington, Vt.	15.2	15.7	5.5	8.3
Boston, Mass	13.2	13.7	4.5	8.0
Worcester	13.8	14.3	4.5	8.1
Hartford, Conn.	13.9	14.4	4.5	7.6
New Haven	13.3	13.8	4.5	6.9
Providence, R. I.	13.3	13.8	4.5	7.8

*Undivided.

Effective August 8, 1940, the company changed its commercial consumer policy in New York and New England to the following:

Full compartment deliveries: Accounts buying less than 20,000 gal. annually, 0.5 cent above the commercial-consumer price; accounts buying from 20,000 to 120,000 gal. annually, commercial-consumer price; accounts buying 120,000 gal. annually and above, 0.25 cent off consumer price. Split compartment deliveries: Delivery of less than a full compartment, 250 gal., commercial-consumer price plus 1 cent. Steel-barrel deliveries: Commercial price plus 3 cents.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dir.	Gasoline Incl. tax	Kero. tank wag.
Omaha	17.9	15.4	6.5	9.8
McCook	18.5	15.9	6.5	9.5
Norfolk	18.4	16.9	6.5	10.*
North Platte	17.5	16.4	6.5	10.7
Scottsbluff	18.9	16.0	6.5	9.5

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Incl. tax	Kero. tank wag.
Dallas, Tex.	14.0	17.0	5.5	7.0
Fort Worth	14.0	17.0	5.5	7.0
Houston	14.0	18.0	5.5	8.0
San Antonio	14.0	18.0	5.5	7.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline Tank wag.	Gasoline Incl. tax	Kero. tank wag.
Halifax, N. S.	29.5	13.0	19.0
St. John, N. B.	29.5	13.0	19.0
Montreal, Que.	28.0	11.0	17.5
Toronto, Ont.	28.5	11.0	18.0
Hamilton, Ont.	28.5	11.0	18.0
Winnipeg, Man.	30.5	10.0	22.5
Brandon, Man.	31.0	10.0	23.0
Regina, Sask.	28.0	10.0	20.0
Saskatoon, Sask	30.8	10.0	22.8
Edmonton, Alta.	28.9	10.0	20.9
Calgary, Alta.	26.0	10.0	18.0
Vancouver, B. C.	25.0	10.0	24.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In Maritime Provinces both divided and undivided dealers pay tank-wagon price.

Selected Crude Prices

Representative selected crude prices from all sections of the country appear below:

East Texas	$1.25
Conroe	1.43
Tepetate, Louisiana	1.18
Smackover, Arkansas, heavy	.83
Illinois basin	1.37
Pecos County, Texas	.95
Lance Creek, Wyoming	1.12
Bradford, Pennsylvania	2.75

Gravity Schedules

Top prices include all gravities above grades designated, and low prices include all gravities below grades designated:

Gravity	Signal Hill Calif.	Oklahoma, Kansas	Gulf Coast, Texas	West Texas, Lea County, N.M.
18-18.9	$0.80	...	...	...
19-19.9	.84	...	$1.06	$0.70
20-20.9	.88	$0.85	1.08	.72
21-21.9	.92	.87	1.10	.74
22-22.9	.96	.89	1.12	.76
23-23.9	1.00	.91	1.14	.78
24-24.9	1.03	.93	1.16	.80
25-25.9	1.07	.95	1.18	.82
26-26.9	1.11	.97	1.20	.84
27-27.9	1.15	.99	1.22	.86
28-28.9	1.18	1.01	1.24	.88
29-29.9	1.20	1.03	1.26	.90
30-30.9	1.23	1.05	1.28	.92
31-31.9	...	1.07	1.30	.94
32-32.9	...	1.09	1.32	.96
33-33.9	...	1.11	1.34	.98
34-34.9	...	1.13	1.36	1.00
35-35.9	...	1.15	1.38	1.02
36-36.9	...	1.17	1.40	1.04
37-37.9	...	1.19	1.42	1.06
38-38.9	...	1.21	1.44	1.08
39-39.9	...	1.23	1.46	1.10
40 and above	...	1.25	1.48	1.12

PRICES OF REFINED PRODUCTS...

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of December 2, 1941
(Most prices in cents per gallon)

The quotations are exclusice of the federal excise taxes of 1.5 cents a gallon on gasoline and 4.5 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.06	.0625
63-66 octane	.05625	.05875
60 octane and below	.0525	.055
60-62 400 grades:		
72-74 octane (regular)	.06	.0625
63-66 octane	.05625	.05875
60 octane and below	.0525	.055

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.05875	.06125
63-66 octane	.0550	.06
60 octane and below	.05125	.05375
60-62 400	.05	.06

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.05875	.06125
63-66 octane	.0550	.05875
60 octane and below	.05	.06

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)	.05875	.06125
60 octane and below	.05	.05375

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.06	.0625
63-66 octane	.05625	.05875
60 octane and below	.0525	.055
60-62 400 grades:		
72-74 octane (regular)	.06	.0625
63-66 octane	.05625	.05875
60 octane and below	.0525	.055

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)	.0750	.0775
80 octane (1939 Research)		.0800

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.065	.0725
54-58 U. S. Motor	.055	.0625

EAST COAST (domestic)—

U. S. Motor (minimum 72 octane):		
New York (Bayonne)*	.08	.085
Philadelphia	.08	.0825
Boston		.085
Baltimore	.0775	.0825
Charleston, S. C.	.0725	.0775

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
80 plus (research)	.06625	.0675
72-74 octane (leaded)	.0625	.06375
70-72 octane (unleaded)	.0625	.0650
68-70 octane (unleaded)	.0625	.0650

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.05125
Grade 18-55	.06125	.0625

NORTH TEXAS—

Grade 26-70		.0475
Grade 18-55	.05625	.0575

CALIFORNIA—

75-85 375-390	.045	.05

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.0475

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p. 110-flash, 540-550 e.p.	.0375	.03875
41-43 gr., 300-320 l.b.p. 110-125 flash, 500-520 e.p.	.03875	.04
46-48 gr., 210-230 l.b.p. 480 max., e.p.	.04125	.0425

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.0450	.0475
41-43	.04375	.04625

NORTH TEXAS—

41-43	.0425	.04625

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04375	.04625

ARKANSAS (Ark. and N. La. del.)—

41-43	.04375	.04625

PENNSYLVANIA (inland refineries)—

46	.0625	.0650
45	.0625	.06375

CHICAGO (Based on Group 3)—

42-44	.0450	.0475
41-43	.04375	.04625

CALIFORNIA (Pac. Coast market)—

38-40 high-burning test	.045	.055

NEW YORK (Bayonne, N. J.)—

41-43		.053

GULF COAST (domestic)*—

41-43	.04	.04125

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.04	.0425
No. 1 white (38-42)	.03875	.04125
No. 2 straw (32-36)	.03625	.03875
No. 3 zero to 10 (28-32)	.035	.0375

NORTH TEXAS—

No. 1 white (38-42)	.03825	.04125

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2 (32-36)	.0325	.035

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.0325	.035

CHICAGO (Based on Group 3)—

Range oil	.04	.0425
No. 1 white (38-42)	.03875	.04125
No. 2 straw (32-36)	.03625	.03875
No. 3 zero to 10 (28-32)	.035	.0375

NEW YORK (Bayonne, N. J.)—

*No. 1		.053
*No. 2		.052
*No. 3		.052

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

No. 5, low pour point (18-22)	.85	.90
No. 6, 15 and above (10-16)	.85	.90

NORTH TEXAS—

No. 5, low pour point (18-22)	.80	.85
No. 6, 15 and above (10-16)	.80	.85

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

No. 5, low pour point (18-22)	.85	.90
No. 5, 15 and above (18-22)	.85	.90
No. 6, low pour point (10-16)	.85	.90
No. 6, 15 and above (10-16)	.85	.90

PENNSYLVANIA (inland refineries)—

36-40	.055	.06

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.75	.85
10-16 (cargo lots)	.75	.85
12-17 (tank cars)	.65	.75
10-17 (high sulfur)	.55	.65
San Joaquin Valley:		
10-18 (tank cars)	.70	.85
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel		.04
43-47 diesel		.04125
48-52 diesel	.04125	.0425
53-57 diesel		.0425
58-and-above diesel	.0425	.04375
Diesel bunkers		1.45
Bunker C (bulk cargoes)	.85	.90
Bunker C (bunkers)	.85	.90

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.053
28-30 diesel (lighterage 6¼c per bbl.)		2.15
28-30 diesel (tank cars)		.052
Bunker C (to ocean-going ships in N. Y. Harbor)	1.35	1.45
Industrial fuel (tank cars)		.044

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25		.27
150-160 D, 0-10		.23
150-160 D, 10-25		.225
120-125 D, 0-10		.225
120-125 D, 10-25		.22
Steam refined:		
600 dark green (untreated)		.145

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point		.305
15 pour point		.295
25 pour point	.25	.28
Steam refined:		
600	.15	.16
650	.155	.165
600 flash	.16	.175
630 flash	.17	.18

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.145
180-3		.15
200-3		.15
250-3		.165
280-3		.175
280-4		.17
300-3		.185
350-3½		.19
400-3½		.20
500-3½		.205
600-3½		.21
100-2½ paraffin oil 10-25		.0825
10-25 pour point:		
200-3		.145
250-3		.16
280-3		.17
280-4		.165

CALIFORNIA (moving to dom. mkt.)—

Pale oils:		
200-2½-3	.07	.0775
300-2½-3	.07	.0775
400-3-4	.0725	.08
450-3-4	.0725	.08
550-3-4	.0875	.1075
600-3-4	.0875	.11
Red oils:		
200-4-5	.07	.0775
300-5-6	.0725	.08
350-5-6	.09	.11
400-5-6	.09	.11
450-5-6	.09	.1125
500-5-6	.0925	.1125
600-5-6½	.0925	.1125
700-6½ plus	.0925	.1125
750-6½ plus	.0925	.1125
900-6½ plus	.0925	.1125

GULF COAST—

Pale oils:		
100-3	.0625	.0650
200-3	.0850	.0875
300-3	.09	.0925
500-3½	.0975	.10
750-3½	.10	.1025
1,200-3½	.1025	.10375
2,000-4	.1050	.1075
3,000-4	.1225	.1250

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pour point		.385
10 pour point		.375
15 pour point		.365
25 pour point		.31
200 vis., at 70° F., 3 color:		
Zero pour point		.405
10 pour point		.395
15 pour point		.385
25 pour point		.33

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale		.06

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale		.0625
124-126 (A.m.p.) w.c. scale		.0625

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax	.0560	.0640
128-130 (A.m.p.) wax	.0560	.0660
130-132 (A.m.p.) wax		.0585
133-135 (A.m.p.) wax		.0615
135-137 (A.m.p.) wax		.0640
Crude scale:		
124-126 (A.m.p.) w.s.		.061
124-126 (A.m.p.) y.s.		.061
Petrolatum in barrels, carload lots:		
Dark green		.02875
Amber	.02875	.03125
Extra amber	.03125	.03375
Lily white	.04875	.05375
Snow white	.05625	.05750
Cream	.04125	.05250

Export Prices

GASOLINE

GULF COAST—

60-62 400	.0550	.0675
61-63 390	.0575	.0650
64-66 375	.0575	.0650

LOS ANGELES—

U. S. Motor grades:		
Above 60 octane	.06	.0625
65-69 octane	.0575	.06
60-65 octane	.0525	.055

KEROSENE

GULF COAST—

41-43 water white	.0375	.04

LOS ANGELES—

41-43 water white	.05	.0525

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbl.)—

Cylinder stocks:		
600 S. R. unfiltered		.265
630 S.R. unfiltered		.27
600 flash, S.R.		.265
650 flash, S.R.		.27
Bright stock:		
Light, 25 pour point	.36	.37

NEUTRAL OIL

200-3 color	.43	.50
150-3 color	.41	.46

PARAFFIN WAX

NEW YORK (prices per bbl.)—

123-125 A.m.p.	.0560	.0625
125-127 A.m.p.	.0560	.0625
128-130 A.m.p.	.0585	.0650
133-135 A.m.p.	.0615	.0700
135-137 A.m.p.	.0640	.0700
Crude scale:		
124-126 w.s.		.061
124-126 y.s.		.061

MARKET RECORD OF ACTIVE OIL STOCKS . . .

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1941 High	1941 Low	Week ended Nov. 29 High	Week ended Nov. 29 Low	Week ended Nov. 29 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1940	Com. sh. earn. 1940	Com. sh. earn. 1939	1940 High	1940 Low	1939 High	1939 Low
63½	44	57½	56½	56½	Amerada Corp.	788,675	N.P.	50cQ	10-31-41	$2.00	$2.25	$1.56	58½	38½	74½	50
27½	19½	26	25½	25¾	Atlantic Refining	2,663,999	$25	$1.25†	12-15-41	1.00	2.11	1.66	27½	18¼	24⅝	18⅛
13½	7	11½	10⅝	10¾	Barber Asphalt Co.	390,223	$10	25c	5-21-40	.50	—.48	1.39	16⅝	8½	21	10¼
10½	7⅝	9⅛	9	9	Barnsdall Oil Co.	2,558,779	$5	15c	12-8-41	.60	.97	.76	13⅜	7⅛	19½	11⅛
6½	5¼	6⅛	6	6⅛	Consolidated Oil Corp.	13,751,726	N.P.	12½cQ	11-15-41	.72½	.28	.55	8⅛	5½	9⅞	6⅛
27⅛	17⅜	26⅞	25¼	25¼	Continental Oil of Delaware	4,682,572	$5	25cQ	9-29-41	1.00	.92	1.35	25	16⅛	31½	19⅞
5	3½	4	3⅝	3⅞	Houston Oil	1,098,618	$25	....	10-17-30	....	.30	.43	6⅞	3⅜	9⅜	4½
13⅜	9⅝	11¾	11⅛	11¼	Lion Oil Refining	435,815	N.P.	25cQ	10-15-41	1.00	1.05	1.50	14⅜	9	18⅛	10
17⅞	13	17⅞	16⅞	16⅞	Mid-Continent Petroleum	1,857,912	$10	75c	12-1-41	.80	1.60	1.42	17⅜	11½	18	11⅛
15½	9⅜	14½	13⅞	13⅞	Mission Corporation	1,378,645	$10	60c	10-16-41	.25	1.01	.87	11¾	7⅛	14⅞	8¾
7⅞	4¼	6⅞	6⅛	6⅛	National Supply	1,155,517	$10	....	12-22-37	....	—.49	—.87	9¾	4⅝	15½	5⅝
10	6¾	8⅝	8	8	Ohio Oil Co.	6,563,377	N.P.	25c	12-15-41	.45	1.02	—.10	8¾	5⅜	10½	6
9¾	5½	7⅜	7	7¼	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	....	—.21	.81	8⅞	5½	11⅞	7
10½	7¼	9¼	9¼	9¼	Pan American Pet. Trans.	4,702,945	$5	25c	12-21-40	.25	1.20	1.10	10½	6¾	8¾	5
46	35¾	44⅞	43¾	44	Phillips Petroleum	4,449,052	N.P.	†75c	11-29-41	2.00	2.60	2.21	41¾	27⅛	46½	31¼
17	14¼	16¼	15	15⅝	Plymouth Oil Co.	1,038,633	$5	30c	9-30-41	‡1.30	1.38	2.38	22⅝	15	24	17⅛
11	7	11	10½	10⅞	Pure Oil Co.	3,982,031	N.P.	50c	12-1-41	.25	1.21	1.11	11½	6¾	11⅜	6⅛
12⅛	7¼	10½	10¼	10¼	Richfield Oil Corp.	4,010,000	N.P.	50c	12-21-40	.50	.95	.65	9¼	5⅞	10¼	6⅝
17	12½	14¼	13¾	14	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	9-15-41	1.00	1.05	1.40	20	11	24⅜	15½
15¾	10⅛	16	15	15⅞	Shell Union Oil	13,070,625	N.P.	40c	7-21-41	.75	1.05	.77	13⅛	7⅝	17¼	9⅞
35¼	18⅞	33½	32¼	32⅞	Skelly Oil	995,349	$15	$1.00	12-18-41	1.25	3.28	1.99	23¼	12¼	29½	15½
10¾	8¼	10	9½	9⅞	Socony-Vacuum	31,206,071	$15	25cSA	9-15-41	.50	1.17	1.10	12½	7⅛	15⅛	10¼
25⅛	17⅞	24⅞	24	24	Standard Oil of California	13,003,953	N.P.	†65c	12-15-41	1.00	1.73	1.38	26⅛	16¼	33⅝	24¼
34⅛	25½	32⅞	30¾	31⅛	Standard Oil (Indiana)	15,272,020	$25	50c†	12-15-41	1.50	2.20	2.23	29	20⅜	30	33⅜
45⅝	33	44⅞	44	44¼	Standard Oil of New Jersey	27,280,998	$25	1.50†	12-15-41	1.75	4.54	3.26	46½	29⅞	53½	38
48½	34¼	41⅞	40¼	40¼	Standard Oil of Ohio	753,740	$25	$1.00†	12-15-41	2.00	7.44	6.64	41¾	26¼	32⅜	17
65½	50	65½	62½	62½	Sun Oil	2,434,863	N.P.	25cQ	12-15-41	*1.00	3.03	2.74	65⅞	46¾	66	45¾
2⅜	1⅜	1⅝	1½	1⅝	Superior Oil Corp.	1,388,979	$1	10c	12-28-40	.10	.11	.04	2½	1⅛	3⅝	1⅜
46	34½	46	44	44½	Texas Corp.	10,876,139	$25	50cQ	10-1-41	2.00	2.90	3.02	47⅝	33	50¾	32½
4⅛	2½	2¾	2½	2⅝	Texas Gulf Producing Co.	888,147	N.P.	10c	6-14-41	.20	.63	.69	4¼	2½	5⅜	3⅛
7¾	5¼	6⅞	6½	6½	Texas Pacific Coal & Oil	888,236	$10	10c	12-1-41	.40	.54	1.00	8⅝	5⅜	11⅝	7
11¼	9⅜	11	10½	10⅝	Tide Water Associated	6,371,827	$10	25c†	12-1-41	.70	1.14	1.05	12	8¾	14¼	9½
16	12¾	14⅞	14¼	14⅜	Union Oil Co. of California	4,666,270	$25	25c	11-10-41	1.00	.99	1.25	17½	17	19¾	15⅛
31	25	26	25⅛	25⅛	Union Tank Car Co.	1,177,381	N.P.	50c	12-1-41	1.75	2.22	2.07	29⅞	22⅜	24¼	20⅛
2⅜	1⅝	2⅛	2	2	Wilcox Oil & Gas	470,768	$5	10c	2-15-40	....	.35	.77	3⅝	1⅜	4¼	2⅜

*Also 5 per cent in stock. †Includes extras. Also 2 per cent in stock. —Deficit.

New York Curb Exchange

1941 High	1941 Low	Week ended Nov. 29 High	Week ended Nov. 29 Low	Week ended Nov. 29 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1940	Com. sh. earn. 1940	Com. sh. earn. 1939	1940 High	1940 Low	1939 High	1939 Low
¾	¼	⅜	⅜	⅜	American Maracaibo Co.	1,778,415	$1	....	.....	...	—$0.04	—$0.05	½	¼	1¼	¼
8¼	5⅛	7⅛	6⅞	7⅛	American Republics Corp.	1,308,049	$10	10c	7-10-41	....	.78	.14	10¾	4½	11⅝	5½
2½	1	2	1⅞	1⅞	Bridgeport Machine Co.	263,700	N.P.	$1.25	12-30-37	....	—.88	—.95	3¼	1⅜	7¼	2½
46	36½	42	42	42	Buckeye Pipe Line Co.	200,000	$50	$1	12-15-41	$4.00	5.09	3.13	43	28	34⅝	26½
110¼	87	94¼	92¾	92¾	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-29-41	6.00	6.33	7.87	117	95	130	108⅝
6⅝	3⅝	3⅝	3¼	3⅜	Cities Service (new)	3,703,978	$10	....	6-1-32	....	1.72	.68	6¾	4	9¼	4¼
2	⅝	..	..	..	Cosden Petroleum	465,804	$1	....	.....	....	—.34	.15	2⅛	⅝	2¼	½
19¾	12½	17¾	16½	16⅝	Creole Petroleum	6,974,356	$5	50cSA†	12-15-41	1.00	.98	1.38	24¼	11⅝	28	16¾
9	3¾	8¼	8¼	8¼	Darby Petroleum	351,390	$5	25c	7-15-41	....	1.12	.03	4⅜	2⅞	7⅛	3⅝
2¼	1	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	.12	—.37	2	⅝	2⅝	1½
28¾	20	..	..	..	Eureka Pipe Line	50,000	$50	50c	11-1-41	2.25	—.49	.63	31	20¼	23	15⅛
39	29	36⅞	35¾	35¾	Gulf Oil Corp.	9,076,202	$25	75c†	12-15-41	1.25	2.44	1.69	39⅞	25⅛	45⅛	29¼
65	52¾	62¼	60¼	61½	Humble Oil & Refining	8,987,840	N.P.	62½c	12-26-41	2.00	3.13	3.33	68	47⅛	71	42½
7⅜	5¾	7	6¼	6¼	Imperial Oil of Canada	26,965,078	N.P.	25c	12-1-41	.62½	.65	.71	12⅜	5⅜	17	11⅜
5	2¾	3⅞	3¾	3¾	Indiana Pipe Line	300,000	$7.50	20c	11-15-40	*2.80	.09	.33	7¾	3	7¼	5½
11⅞	8⅞	11½	10⅜	10⅜	International Petroleum	14,324,088	N.P.	50c	12-1-41	1.25	.94	1.19	10⅜	8¼	27½	17
2⅝	1½	1¾	1½	1¾	Kirby Petroleum Co.	500,000	$1	10c	3-15-41	....	.16	.06	2⅝	1⅝	3¾	2⅛
10⅛	7½	8⅛	7½	7½	Lone Star Gas	5,518,347	N.P.	20c	8-22-41	.70	1.17	.98	10¾	7⅝	10½	7⅛
5⅝	4	4⅜	4	4	Louisiana Land & Exp.	2,966,762	$1	10c	9-15-41	.35	.29	.22	6¼	3¾	7⅝	4
10⅛	9½	..	..	..	Margay Oil Corp.	149,943	N.P.	25cQ	10-10-41	1.00	1.02	1.52	17	9¼	17	14½
4⅛	2½	3	3	3	Middle States Petroleum "A"	291,970	$1	37c	1-31-41	.63	.31	.37	4⅛	2⅜	5⅜	2⅜
8	7	7⅛	7	7	Midwest Oil Co.	998,474	$10	45c	12-15-41	.90	.88	.99	8½	5½	8⅜	6⅝
6⅛	5	5	4⅞	4⅞	Mountain Producers	1,593,584	$10	30cSA	6-16-41	.60	.58	.70	6¼	4⅞	6	4⅞
12⅜	10⅛	10⅜	10⅛	10⅛	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-41	1.00	1.12	.95	13⅛	10	14	11¼
12⅞	10¼	11⅞	11¼	11¼	National Transit	509,000	$12.50	50c	6-16-41	1.00	1.08	.91	12½	8¾	9½	7¼
2¼	1	1½	1¼	1¼	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.03	.02	1¼	¾	1¾	1
8¼	6⅝	..	..	..	New York Transit	100,000	$5	30c	10-15-41	.60	.91	.88	7¾	5¼	6	4
10⅛	7¾	9	9	9	Northern Pipe Line	120,000	$10	90c	12-1-41	.80	.70	.31	9⅞	6	7	4½
5½	2⅝	5¼	5	5	Pantepec Oil	2,856,872	$1	....	.....	....	.02	....	5½	2½	7⅝	4
3¾	1	3⅛	2¾	2¾	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.04	.70	3¼	1	5	1¼
2⅝	2⅛	2⅝	2⅝	2⅝	Ryan Consolidated	298,931	N.P.	10c	12-28-40	....	.43	.16	3	1¼	3	1⅞
8	6½	..	..	..	Southern Pipe Line	100,000	$10	50c	12-11-41	.50	.81	.25	11¾	4¾	4⅞	3½
43½	35⅝	37	36	36	South Penn Oil	1,000,000	$25	37½c	9-26-41	2.50	2.10	2.84	44	28	40½	26¾
30½	23	27	27	27	Southwest Penna. Pipe Lines	35,000	$50	50c	10-1-41	6.50	3.22	2.06	35	21	23	18
20⅜	17⅞	19⅛	18¼	18⅜	Standard Oil of Kentucky	2,604,790	$10	25c	9-15-41	1.30	1.47	1.53	20⅞	16½	20⅛	17¼
2¼	1⅜	2⅜	2⅛	2⅛	Sunray Oil	1,975,876	$1	5c‡	12-19-41	.10	.23	.25	2	1⅜	2⅜	1⅜
3¼	2⅝	3	3	3	Texon Oil & Land	936,024	$2	15c	12-27-41	.40	.45	.49	3⅛	2	4	2⅝
4⅝	2¼	4¾	4¾	4¾	Transwestern Oil Co.	750,000	$10	....	.....	....	—.59	—1.42	3⅜	2	6	2½
⅛	½	⅛	¼	⅛	United Gas Corp.	7,818,959	$1	....	.....	....	—.49	—.55	2⅛	⅜	3⅜	1½

*Includes $2.50 capital distribution. †Includes extras. —Deficit. ‡Also 5 per cent in stock.

EQUIPMENT PROGRESS...

Whitney Combines Tulsa and Houston Warehouses at Dallas

The opening of a new warehouse at 2826 Elm Street, Dallas, Tex., under the direction of J. W. Anderson, direct factory representative for the Mid-Continent field, was announced by Whitney Chain & Manufacturing Co., Hartford, Conn.

This Dallas warehouse will carry a complete stock of Whitney roller and silent chains and couplings and will combine the services of the previous factory warehouses at 224 East Third Street, Tulsa, and 4411 Navigation Boulevard, Houston, Tex. Sales and engineering services will be continued from these points as in the past.

Under the emergency conditions existing, the company believes that this new arrangement will allow them to give the best possible services to friends and customers in the Mid-Continent field.

TRADE LITERATURE

JOSEPH T. RYERSON & SON, Inc., Chicago, Ill.—A booklet comparing the S.A.E. specifications for steels with those of the A.I.S.I. (American Iron and Steel Institute). The booklet contains all the latest official data for both of these new systems of identification. Direct comparisons of the equivalent or alternate steels are given in quick tabular form, the two systems are explained and complete analyses ranges for straight carbon and alloy steels of both are listed.

BRISTOL CO., Waterbury, Conn.—Folder No. 845 describing the Bristol line of Hex socket screws which include set screws, socket-head cap screws, socket-head stripper bolts, pipe plugs, tee keys, and screw-driver type keys.

CLEVELAND TRACTOR CO., 19300 Euclid Avenue, Cleveland, Ohio. — Twenty1fifth anniversary issue of "Cletrac Facts," giving the history of the growth of the company and illustrating many models and uses of its tractors. Also included is a list of Cletrac dealers and photographs of Cletrac personalities.

FOSTER ENGINEERING CO., 109-117 Monroe Street. Newark, N. J.—Catalog 70, describing in detail Foster automatic valves. Illustrations and diagrams are distributed throughout. A copy of this catalog will be sent to executives and engineers engaged in those industries serving national defense and if the request is written on their companies' letterheads.

EDWARD VALVE & MANUFACTURING CO., INC., East Chicago, Ind.—Catalog 12, Section C, for cast-steel valves. Included are complete design, dimensional and metallurgical descriptions of Edward cast-steel stop, check, and stop-check valves. Edward patented impactor hand wheels, throttles, bypasses, etc.

MASON-NEILAN REGULATOR Co., 1205 Adams Street, Boston, Mass.—Catalog 41, which describes many standard items in the Masonelian line and includes illustrations and technical data.

MEEHANITE RESEARCH INSTITUTE OF AMERICA, INC., 311 Ross Street, Pittsburgh, Pa.—A new 12-page bulletin entitled "Meehanite Castings in Defense Work." The booklet describes and illustrates Meehanite castings used in aircraft manufacture, gun and shell manufacture, machine-tool castings, and radio, marine, truck, and steel-mill equipment.

DOWNINGTON IRON WORKS, Heat-Transfer, Department, Downingtown, Pa.—The company's first general bulletin on heat exchangers. This represents a new line as a standard product for this company.

CATERPILLAR TRACTOR CO., Peoria, Ill.—Form 6905, in which the advantages of making one's own electricity with Caterpillar diesel electric sets are explained, and many installations throughout the country are pictured.

Vinson Supply Opens Branch Office at Amarillo, Tex.

Vinson Supply Co., Tulsa, has announced the opening of its new branch office in the Rule Building, Amarillo, Tex. This expansion will enable the Vinson company to serve the Texas Panhandle territory more effectively.

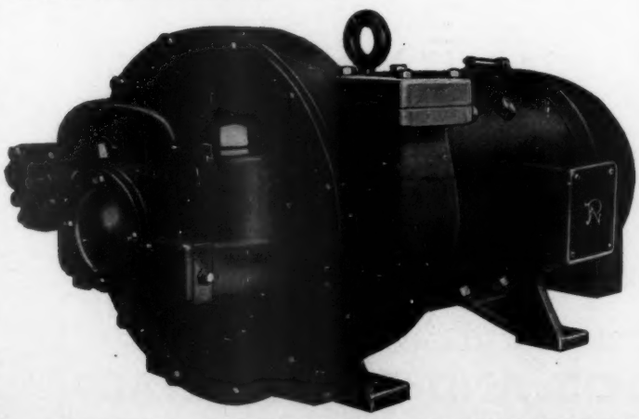
The Amarillo office will be in charge of W. Dow Perry, who for the past several years has been in charge of the area for the Joseph A. Coy Co. The opening of the newest Vinson branch brings to four the number of offices maintained by this company in Oklahoma and Texas. The other three are located in Dallas, Odessa and Tulsa.

Manufacturers represented include Fisher Governor Co., Chase Brass & Copper Co., Tube-Turns, Inc., and National Tube Co. Stocks are maintained in Tulsa and Odessa.

BETTIS ANNOUNCES NEW TURBOGENERATOR

In announcing the new Type R-14 Pyle-National 14-kw. turbogenerator, Bettis Sales Co., 1507 Maury St., Houston, Tex., exclusive oil-field distributors, list the following as principal features:

1. Drop-forged-steel turbine wheel.
2. Positive-action overspeed device.
3. Extremely low water rate per kilowatt developed.
4. Close voltage regulation.
5. Compact—can be placed in a very small space.
6. Will operate against back pressures up to 20 lb.



This new Type R-14 turbogenerator is especially adapted to use in small refineries, recycling plants, drilling rigs, and pumping stations. Full information will be furnished by the Bettis company on request.

AMONG EQUIPMENT MEN

Zorgdrager Becomes McEvoy Sales Head

Morey Zorgdrager, formerly assistant sales manager for McEvoy Co., has been promoted to sales manager. A. Henderson, formerly sales manager, is now vice president and operating manager of the McEvoy plants.

M. ZORGDRAGER

Mr. Zorgdrager received his chemical engineering degree from the University of Colorado in 1929. He worked in the research department of the Gulf Production Co. and then became district engineer for the Texas Railroad Commission. From a position as sales manager of the Universal Engineering Co., he went with the McEvoy Co. in 1935. Concurrent with Mr. Zorgdrager's promotion, McEvoy Co. announced a redistribution of McEvoy salesmen to improve service.

Fritz Krause covers the East Texas and Northwest Louisiana areas. His headquarters are at Kilgore. Bill Culver, with headquarters at Alice, now serves the Southwest Texas area. E. D. McMurry serves the Houston territory, and Jerry Faubion covers the Gulf Coast area of Louisiana.

Weatherford Spring Appoints West Texas Representative

The Weatherford Spring Co. of Weatherford, Tex., manufacturers of Weatherford wall-cleaning scratchers, spiral casing guides, cement retaining baskets and straight casing guides, announces the appointment of W. T. Hoey as West Texas representative, headquartering at Odessa.

Mr. Hoey was educated at the Missouri School of Mines and Metallurgy and served for 12 years as geologist and production engineer for the Tide Water Oil Co. in Texas. His wide experience has also included management of production for the Independent Oil Co. and 4 years in sales engineering for oil-country specialty companies.

Mr. Hoey is versed in the practical application of Weatherford products including the technical phases of stage cementing and filter-cake removal. His job will be to cooperate with field customers throughout the West Texas area in the use of Weatherford products for more successful drilling and more profitable production.

Meehanite Sets Up Sales Service Department

C. E. Herington has been appointed sales director of a newly created sales service department established by the Meehanite Research Institute of America, Inc., Pittsburgh, Pa. The object of the department will be to provide assistance in the solution of current and future selling problems encountered by Meehanite manufacturers in the United States and Canada.

CLASSIFIED ADVERTISING

THE MARKET PLACE OF THE OIL INDUSTRY . . .

Patent Attorneys

PATENTS — TRADE MARKS

All cases submitted given personal attention.

Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorney's Fees"—FREE.

LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
618 Bowen Bldg., Washington, D. C.

Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

LEASES ROYALTIES
PRODUCING OR NONPRODUCING
Texas, New Mexico, Oklahoma, Louisiana and Illinois
20 Years Experience
Inquiries Invited
B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

THE
OIL PROPERTIES EXCHANGE
For Sale: Many Producing Oil Properties, Royalties, Drilling Blocks, and Oil Investments of various sizes in Mid-Continent area. Contact us to Buy or Sell properties.
Alexander Bldg., Tulsa, Okla.

FOR LEASE, 150,000 acres in Tennessee Coal Basin on America's largest timbered plateau, part of Appalachian coal, oil and gas field. Oil being produced here now from shallow wells. Stanolind and Benedum & Trees have leases here. G. E. Harrison, Crossville, Tennessee.

CHEAP CRANE COUNTY Sec. 18, B28, under Magnolia-Stanolind leases. Jefferson G. Smith, 215 Littlefield Bldg., Austin, Tex.

OIL LEASE: Have 125 acres Woodson County, Kansas, oil lease. 80 acres will produce—field bounded. Three producing gas wells in Bartlesville at 1162. Top of Mississippi Lime at 1200', oil at 1205'. I drilled into this strata and produced oil. Have drilling machine on lease, tubing, casing, oil tanks, gun barrel, etc. If you can match up my investment you can have 50%. Write for full details. E. B Jaeger, 3702 W. 3rd St., Los Angeles, Calif.

BLOCK of leases in Southwestern Oklahoma. Open for deal with parties able to drill well for acreage. Good geology. Write Philo Dempsey, Roosevelt, Okla.

UNCOMPLETED Wildcat Well near Dierks, Ark. Depth 1410 feet, 8000 acre block. Shut down for lack of funds. Write J. C. H., Box 74, Dierks, Ark.

Legal Blanks

BURKHART'S legal blanks and general forms serving Mid-Cont. oil field since 1908—Okla. Kans. N. Mex. Tex. Ala. Ark. Fla. Ga. Ill. Ind. Ky. La. Mich. Miss. Mo. Neb. N. Dak. Tenn. Wyo. Free catalog samples on request. Burkhart Ptg. & Sta. Co., 115 S. Cinn., Tulsa, Oklahoma.

Incorporation

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Business Opportunity

A LUBRICATING Oil and Grease business made 40% on selling price first nine months this year; will take $50,000 cash to handle. No debts. 10 year established business. Box A-742, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE OR TRADE—One Refinery in the heart of Kansas oil field. Trade for Ranch or sell for cash. Box A-753, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE
Revolutionary new lubricant for rubber parts of automobiles, fan belts, doors and a penetrant. Process license or in bulk. Crowe Chemical Co., 533 Mayo Bldg., Tulsa, Okla.

CRUDE Oil, Producing Leases and Royalties bought and loaned on. R. A. Bass, Bristol Hotel, Houston, Texas.

DRILLING and Producing Expert wants proposition from parties desirous of having leases developed on part cash and part working interest basis. I own complete Rotary Rig, power drive, tools, steel derrick, drill pipe, truck house, etc. Write full particulars for prompt reply. Box A-770, The Oil and Gas Journal, Tulsa, Okla.

NO OIL GAMBLE. WANT INVESTOR.

Nationally experienced Oklahoma City Sales Executive has exclu. sale of mfd. necessity, save millions in U. S. now destroyed. Needed by Govt. business houses, warehouses, mills, homes, every farm. $10,000 cash for ½ interest. If you dont see $100.000 or more net, dont do it. Also, can get product going to all women, cost $6, sell $29.50 and million should be sold. Two patented necessities, no gamble, no priorities, as good after war as now, a sound, active or silent, lifetime connection. Write Box A-771, The Oil and Gas Journal, Tulsa, Okla.

Mailing Lists

ROYALTY owners, Oil investors, Unit holders, Stockholders, Operating personnel of oil industry. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Okla.

Ranches—Farm Lands

BUY RANCH LAND under oil development. Leased for drilling, returns ⅛ royalty. 20 acres $135 or 40 acres $250. Full details furnished. Write Box A-734, The Oil and Gas Journal, Tulsa, Okla.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa Oklahoma

WE BUY & SELL all types of Oil and Gas Royalties. Sales restricted to registered dealers only. Grimes Royalty Co., National Mutual Bldg., Tulsa, Okla.

OUR READY MARKETS Enable us to pay cash for producing royalty acreage, lots, units and oil payments. GLOBE SECURITIES CO., LTD., Oklahoma City.

DEEDED ROYALTIES
State Oil & Gas Leases
Harry S. Wright, Farmington, N. M.
REGISTERED ROYALTY DEALER

WE MAINTAIN A MARKET FOR REGISTERED DEALERS IN ALL TYPES OF OIL ROYALTIES
FIRST DEPENDABLE OIL CORP.
522 Fifth Ave., New York, N. Y.

Help Wanted

DESIGNERS for oil refinery piping, also structural and concrete. Must be thoroughly experienced this class of work. State fully first letter salary desired, complete detail of your experience, age and when services available. Arthur G. McKee & Company, 2300 Chester Avenue, Cleveland, Ohio.

GOOD salaried position open with responsible oil company for expert male stenographer who also has oil experience and ability in purchasing and selling leases and handling drilling blocks. Must have good acquaintance among industry. Apply P.O. Box 1583, Ft. Worth, Texas.

PURCHASING AGENT—Midwest Chain Operator wants Purchasing Agent—Heating Oils — Motor Oils — Gasolines — For Highway — Water and Rail Terminal Facilities. Box A-751, The Oil and Gas Journal, Tulsa, Okla.

ENGINEER WANTED in central states refinery. Must be a college graduate in engineering and experienced in design and erection of petroleum refining constructions. Box A-731, The Oil and Gas Journal, Tulsa, Okla.

Financing

LOANS made on producing oil, gas and mineral lands. New York Note & Share Corp., 109 Broad St., New York City.

Equipment Wanted

HIGHEST cash prices paid for entire plants or individual production tools, milling machines, shapers, drill-presses, lathes, punch presses, electrical equipment and motors. Write us and a representative will call. COOK COUNTY MACHINERY CO., 1132 W. Lake St., Chicago, Ill.

WANT TO BUY 94 ft. A.P.I. Drilling Derricks. Melton Supply Company, P. O. Box 1360, Seminole, Oklahoma.

For Sale—Equipment

FOR SALE: 1-T20 crawler type McCormick Deering Tractor in first class condition; 1—W30 McCormick Deering Tractor on steel in first class condition; 1—10 x 4¼ x 10 Chicago Pneumatic Compressor overhauled; 1—8 x 8 Ingersoll Rand Compressor overhauled. Williams Supply Co., Bartlesville, Okla.

FOR SALE
COMPRESSORS

From 100# to 2,000# discharge pressures in capacities from 100 cu. ft. to 3000 cu. ft. per minute either belted or direct connected gas, electric or Diesel types.

ELECTRIC MOTORS
25 Cycle and 60 Cycle
From 75 to 250 HP

ENGINES
Gas & Diesel
from 50 to 500 HP

L. F. SMITH COMPANY
217 W. Archer
Tulsa, Oklahoma

We guarantee the condition of all equipment rebuilt by us.

FOR SALE: Direct to operators for cash. No brokers. Casing, line pipe, fittings, tubing, rods, tanks, pull machines, powers, service masts, engines. C. T. Boone, Emporia, Kansas.

MATERIAL—STOCK—AIR PLANT
Priced to sell—all or any part
1—Take off Pulley Miller Gas Engine to Overhead Line Shaft
1—165 HP Miller Gas Engine
1—Burt-Cross Air Filter
1—2½" x 14' Overhead Line Shaft Comp.
1—5½" x 2½" Air Tank
1—Wakesha Motor Radiator Frame
1—"10" Ingersoll-Rand Compressor
1—Manzel Lubricator
2—Blaw-Knox Tracifiers 3"
2—10½ x 4¾ x 12 Worthington Compressors.
2—Manzel Lubricators
1—Air Pump
1—5' x 5' Scrubber Tank
1—2" Nelan-Sch Gas Regulator
1—2" CF HP Gas Regulator
2—2' x 5' Making Tanks
1—80' x 30' Steel Frame Building.
Located Seminole, Okla.
BOGE IRON & METAL CO.
800 S. St. Francis Ave., Wichita, Kansas

GASOLINE STORAGE TANKS
Steel riveted horizontal — 7' x 30'
GILBERT PIPE & SUPPLY CO.
Electra, Tex.

3—Ingersoll-Rand High Pressure Compressors size 7¼" x 20". Attachments for Oil and Gas Horizontal Engines. Compressors are new, have never been used. Price $200.00 each.
1—Easton Cole & Burnham Pipe Machine, cuts 2½" to 8", 3 sets dies, Belt Drive. Price $500.00.
1—Oster, cuts 2½" to 8"; Price $250.00.
1—Oster, cuts ½" to 2". Price $100.00.
1—Jarecki, cuts ½" to 2". Price $125.00.
J. O. GRIFFIN COMPANY
2030 W. Main St., Springfield, Ohio.

3—100 HP Continental Boilers
2—66 HP Lucey Boilers, A-1 condition
3—Complete Power Rigs
Several rebuilt engines.
K. S. RICHARDS
Box 443 Phone 3-5600 Fort Worth, Tex.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL

Tulsa, Oklahoma